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Exploring the UNESCO Geopark concept as a pathway to a geotourism attraction: A Kaikoura case study, Canterbury, New Zealand

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A dissertation submitted in partial fulfilment

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by

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Abstract

Exploring the UNESCO Geopark concept as a pathway to a geotourism attraction: A Kaikoura case study, Canterbury, New Zealand

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The concept of geoparks was first introduced in the first international conference on geoparks held in China in 2004. Here in New Zealand, Kiwis are accustomed to national parks, land reserves, marine reserves, and urban cities and regional parks. The concept of these protected areas has been long-standing in the country, whereas the UNESCO concept of geoparks is still novel and yet to be established in New Zealand.

In this dissertation, I explored the geopark concept for better understanding of its merits and examined the benefits of geotourism attractions as a sustainable economic development strategy to retrieve a declining rural economy. This research is focused on Kaikoura as a case study with geological significance, and emphasizes pre-earthquake existing geological heritages and new existing geological heritages post-earthquake to determine whether the geopark concept is appropriate and what planning framework is available to process this concept proposal should Kaikoura be interested in future.

Keywords: geoparks, geotourism, protected areas, planning, governance, earthquake recovery, New Zealand.

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Abbreviations

UNESCO	United Nations Educational, Scientific and Cultural Organization
IUCN	International Union for Conservation of Nature
SH1	State Highway 1
UC	University of Canterbury
EGN	European Geoparks Network
DOC	Department of Conservation
ECAN	Environment Canterbury Council
GNZ	Institute of Geological and Nuclear Science
KDC	Kaikoura District Council
PAs	Protected Areas

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Chapter 1.0 Introduction

New Zealand is well provided for with parks of varying categories however, the geopark concept has yet to be established in this country. The existing parks, both public open green spaces and protected area reserves, expresses exceptional natural beauty. Most of these natural landscapes and scenic views are found in parks located outside the urban boundaries of cities and whose rural townships are challenged with declining economies alongside their distance from the urban centres. Such areas can enormously benefit from the establishment of natural attractions, such as geoparks (Nowlan, Bobrowsky and Clague, 2004).

Prior to the November 2016 earthquake event, the Kaikoura district was thriving in its local economy and tourism ratings from international visitors was favourable(Ministry of Business Innovation and Employment, 2016). This situation changed dramatically after the earthquake. The local territorial authority, the Kaikoura District Council (KDC) has, since the earthquake, worked to strengthen community connectivity to see their district through to a full recovery. The identification and development of appropriate natural attractions in this disaster-affected region has the potential to contribute to the sustainable economic development the district needs to fully recover (Nowlan, Bobrowsky and Clague, 2004).

Developed in recent years, the geopark concept has the intention of promoting sustainable economic development through geotourism, a nature-based tourism venture with the main attractions focused on the geological significance and heritage of an area. It could be said, geotourism is one of the key components to a geopark that commonly overlaps with educational activities to promote the geo-sites while at the same time rake in local revenue for the local communities. (Farsani, Coelho, and Costa, 2011).

1.1 Key definitions and concepts

Before moving onto the next sections of this chapter, it is necessary to provide the definitions of the main concepts to avoid ambiguity throughout this paper.

1.1.1 Geopark

According to UNESCO, geoparks are:

"Single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development"(UNESCO, n.d.).

1.1.2 Geotourism

Geotourism is a specific form of tourism emerging from the interests in nature-based tourism ventures. The term geotourism referred to throughout this paper takes on the following meaning:

"Aformofnaturalareatourismthatfocusesongeologyandlandscapecharacterized as independent visits to geological features, the use of geo-trails, viewpoints, guided tours, geo- activities and patronage of geo-site visitor centres"(Newsome and Dowling, 2010).

1.1.3 Protected areas

The concept of protected areas in this study refers to IUCN context on conservation of land. In this study, the term protected area is defined from IUCN as:

"A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"(IUCN Definition 2008).

1.2 Research aim and questions:

The main aim of this study was to explore the concept of UNESCO global geoparks to determine whether a geopark concept is fitting and appropriate in the post-earthquake recovery context for the district of Kaikoura. In order to achieve this aim, this study formulated four research questions to guide the research through in addressing its main research aim:

1. Analyse the UNESCO criteria and IUCN guidelines and determine how these concepts complement or contradict the geopark concept.
2. Identify and analyse the various heritage values associated with the district's landscapes in terms of their potential relevance to geotourism development.
3. Identify key stakeholders and relevant legislation and their relationship to the planning process of a proposed geopark concept.
4. Outline the plan making process a proposed geopark concept will be required to comply with under the relevant legislation – RMA 1991, LGA 2002 and Conservation Act 1987

1. 3 Research structure

This study evaluates the concept of geopark, and protected area in the current literature particularly considering UNESCO geopark members and aspiring geoparks that exist and are operational without a UNESCO recognition or membership.

Evaluation will also analyse the activities behind geotourism attractions and assess the IUCN protected areas guidelines to have an understanding between the two concepts both at an international context and local context and how protected areas influence conservation areas with appropriate legislations at either local, regional or national level.

This paper comprises six chapters. Chapter 2 is a combination of key aspects that form the case study background. A historical background on the indigenous people and local communities of Kaikoura, the geology and geomorphology that profile the unique physical landscapes of the district and highlights of the November earthquake and the impact it brought into the district.

Chapter 3 is the literature review and review of New Zealand legislations relevant to this study. A body of literature that reviews the key concepts to provide a background understanding to what a geopark is, the criteria and standards that underpin the requirements for becoming a global geopark and gaining global recognition with UNESCO status and membership. The chapter also outlines what geotourism is and how this component drives the sustainable life of a geopark through the economic activities that are developed in line with this tourism concept that not only offers international visitors the opportunity to explore the natural environment but these attractions are also a source of revenue earnings. Finally, understanding IUCN's international standards of protected areas to understand New Zealand's conservation practices and how an establishment of a geopark can complement the currently protected area network, strategies and plans.

A review of relevant New Zealand legislation, namely the Local Government Act 2002, Resource Management Act 1991 and Conservation Act 1987, was appropriate to understand what each law possessed and how any future geopark application might be formulated from a planning perspective.

Chapter 4 outlines the methods used in this study, including how field observations and interviews were conducted, and identifies research limitations.

Chapter 5 presents the research results from field observations, interviews and relevant document analysis and introduces the planning process framework. These findings are elaborated in the final chapter of this dissertation (chapter 6), the concluding discussion chapter.

Chapter 2.0 Case study background

2.1 Introduction

The following chapter discusses the history of Kaikoura and its people both indigenous iwi and the early European settlers in the district. An overview of the district's geology and geomorphology is also described along with the impacts felt from the November 2016 earthquake event, to give background knowledge information that will contribute to the later chapters of this study in understanding why Kaikoura's geological heritage is of national and international significance.

2.2 Location of case study

The district of Kaikoura lies along the east coast of New Zealand's north Canterbury region of the South Island with a total land area of 2047 km^2.The district's boundary covers from south of Haumuri Bluffs to north of Kekerengu community (see Figure 1) while the natural features of the inland Kaikoura ranges together with the open Pacific Ocean demarcate the west and eastern boundaries.(New Zealand Statistics, 2013; Local Government Commission, 2009)

"Where the mountains meet the sea is an apt description of Kaikoura district. At a relatively short distance from the coast the Kaikoura canyon plummets to a depth of approximately 1,300 metres, providing an attractive habitat for sperm whales and other marine animals."(Local Government

Commission, 2009, p6)

Figure1Locality map of Kaikoura District on the South Island of New Zealand. (Source: Google Maps)

2.3 Social history: Maori and European settlement

Research on the history of early Maori settlement confirmed that Kaikoura may not have been the first home of early Maori settlement(McAloon, Simmons, and Fairweather, 1998), although there is evidence that the district was favoured by early Maori settlers. This is likely due to Kaikoura's rich food resources on land and abundance of seafood from the ocean.

Between 1820 and1830,Kaikoura witnessed a series of indigenous battles amongst rival iwi, ultimately proving Ngai Tahu to hold the rightful 'mana' of Kaikoura (Elvy, 1950; McKinnon, 2015). Currently, all indigenous matters are administrated through Te Rūnanga o Kaikoura, the tribal council body of Kati Kuri Hapu of the Te Rūnanga o Ngai Tahu. However, in terms ofmanawhenua status, the hapu through the tribal council report to Te Rūnanga o Ngai Tahu (Local Government Commission, 2009, p7).

The early European settlements in Kaikoura date back to 1842 around the time when the whaling station was established by Robert Fyfe. Upon the establishing the whaling station, George Fyffe later joined his cousin's whaling business as business partner. The whaling industry became popular in the 1840s and witnessed the employment of many local Maori and the created business partnerships with foreign whalers. Whales were hunted for their bones, and their flesh to extract oil. However, these early European

settlers soon shifted to livestock farming after the harpoon whaling industry declined and the whaling industry eventually ended in 1964.

2.4 Modern Kaikoura

Today, most local Maori of Kaikoura have European ancestry lines, and their ancestors are traced back to the whalers of the 1840s. Descendents of many of these earliest settlers still live in Kaikoura today, however the total district population has decreased. According to the last 2013 census the total population stood at 3552, a decrease of less than two percent (1.9 %) from the previous 2006 census (New Zealand Statistics, 2013).

Most if not all of the region's local communities, namely Oaro, Clarence and Kekerengu, are located on the coastal side rather than inland due to the area's rugged landscape. Kaikoura's township is inclusive of the peninsula that offers several tourism attractions for both international and local visitors to enjoy. Kaikoura is still known today for its abundance in seafood particularly crayfish. While transport infrastructure amongst the other built environment, suffered extensive damage in the November 2016 earthquake, the town is still serviced by the coastal State Highway 1 (SH1) with limited access while the railway transport connecting Christchurch to Picton is still closed for repairs.

A look back at the district's tourism industry as an economic activity pre-quake reflects this small district was doing prospering well for a small community. According to Ministry of Business Innovation and Employment an average of 50.4 % employment of local residences was directly linked to tourism. International visitors that stayed overnight at a 5 year average stood at 125, 698 at the year ending July, 2016 while 260, 086 visitors stayed longer than an overnight. In terms of commercial accommodation, an average number of established commercial based accommodation at the year ending July, 2016 was 46 of which the daily capacity of stay in the available units totalled 1334 and a combined commercial nights of international and local guests came to 198, 787 at the end of July, 2016. Overall, tourism spending in Kaikoura ending September 2016 totalled $120 million (Ministry of Business Innovation and Employment, 2016; O'Connell, 2017).

2.5 Kaikoura's natural history

Kaikoura has an outstanding physical landscape rich with natural and physical resources. It is home to New Zealand's oldest basement rock 'greywacke and argillite' inclusive of volcanic strata (Paleozoic and, Mesozoic) (Rattenbury et al., 2006; Barrell, 2015). These dated back to the Triassic and early Cretaceous age about 100 – 250 million years old (Rattenbury et al., 2006; Barrell, 2015). Above these basement rocks are strata, also known as cover rocks. Kaikoura's cover rocks include coal measures, quartz sands, marine mudstones, limestones and gravelly conglomerates aging between 1 million to 85 million years

old. These rocks not only shape the beauty of Kaikoura's landscapes but act as indicators geographers, geologists, and research scientists reference to identify fault and fold ruptures/lines caused from the Australian and Pacific tectonic plates activities (Rattenbury et al., 2006; Barrell, 2015).

Barrell (2015) also identified the Kaikoura district as home to many seismic faults (Alpine, Awatere, Clarence, and Hope) and mountain ranges (inland and seaward Kaikoura ranges) dynamically changing the landscape through history. Evidence through the uplifts and erosions that drastically removed most cover strata have been exposing the underlying bedrock (basement rocks) in recent years. Additional findings to Barrell's research found ongoing glaciations activities existing in the inland Kaikoura ranges (Barrell, 2015). Where Barell further speculated despite there being no detailed glaciological investigations conducted to the seaward Kaikoura ranges, glaciations were likely to have occurred on the mountains' upper catchments.

The impacts from these seismic events had provided the district will geological features that played a role in attracting visitors to Kaikoura prior to November 2016 earthquake. These geological features include,

1) The Hikurangi trench encompassing the Kaikoura canyon, the submarine canyon that offer near shore access to sperm whales and dolphins and even seals that have made Kaikoura home
2) The Kaikoura peninsula, complementing the Whaler's bay, seal colony and the whaling station (Fyffe house) and archaeological remains are also available at certain spots on the peninsula
3) The Kaikoura ranges and the river catchments etc are also added features of attractions

2.6 Impacts of November 2016 Kaikoura earthquake

Unpredicted and shocking results from the Australian-Pacific tectonic plates' subduction triggered an earthquake that caused devastating effects in Kaikoura on the 14th November 2016. The 7.8 magnitude earthquake had a depth of just 15 kilometres that exposed and caused physical landscape changes. From large inland slips, coastal land erosions, raised seabed to above 8 metres and a total of 21 faults ruptured in one single shake (Xuhua Shi et al., 2017; Daly, 2017; Nicoll et al., 2016; RadioNZ, 2016).

These seismic fault lines exposed about 180 kilometres of earth surface with the largest reported displacement found on Kekerengu fault of 12 meters. The level of these impacts had drawn international attention to the extraordinary complexity of such natural disaster. Recent literature identified this earthquake as one of the most complex earthquake ever recorded on land(Xuhua Shi et al., 2017; Daly, 2017; Nicoll et al., 2016; RadioNZ, 2016).

While the natural environment experienced changes to its physical landscapes impact was also felt by the built environment particularly impact on infrastructure. The north and south SH1 and rail within the

district boundaries were badly damaged. Corlett (2016) reported repair works continued along the north and south SH1 and rail further stating the full reopening of the inland Kaikoura road was due to open on 19 December 2016 approximately 4 weeks after the earthquake.

Impact on the local people and tourists were also reported. Online media sources provided useful information on the immediate response actions received after the earthquake. The Marae opened its doors and sheltered tourists and provided free home cooked meals with the support of Te Runanga o Kaikoura and Te Runanga o Ngai Tahu flying in more food supplies. The New Zealand and Australia military forces also came to the rescue with food supplies to local communities and provided evacuation trips to Christchurch for foreign tourists who needed air transportation after SH1 was closed (Army Operations, 2016; Sachdera et al., 2016; Beyen, 2016).

New Zealand Transport Agency (NZTA) 2017 reports confirmed plans of opening the SH1 and rail. NZTA August 2017 report confirmed the rail on the main north line linking Picton and Christchurch finally reconnected on 8 August 2017, 9 months after the earthquake event (NZTA, 2017). The report further mentioned this milestone achievement witnessed a roadside celebration led by a seaside ceremony by Te Runanga o Kaikoura joined by the 1500 skilled workers involved in the reconstruction of the rail transport corridor (NZTA, 2017). NZTA latest report updates (8 November 2017) expressed plans to reopen the SH1 by the 15 December 2017. However the Agency assured alternative routes (SH 63, 6, 65 and 7) will remain open in case of unexpected delays to opening the SH1 (NZTA, 2017).

The natural disaster required a detailed response from the territorial authority. In April 2017, the Kaikoura District Council (KDC) announced the adoption of the Reimagine Kaikoura District Recovery Plan, which will set the agenda for restoration and rebuild over the next five years (O'Connell, 2017).

Given the significance of tourism (see section 2.4) in the district, both the local authority and the central government have been active in supporting the industry post-earthquake. New Zealand central government announced after the earthquake the State was releasing a $7.5 million relief package to aid for Kaikoura's small tourism businesses. These relief packages aimed at providing subsidies to these businesses to assist employers retain their employees after most businesses temporarily closed after the quakes (Fairfax Reporters, 2016).

The KDC recovery plan however, was the first step of the many to come taking the district forward to recovery. The recovery plan provides insights on the area components the district will focus recovery projects in, the methods and approaches to use and stakeholders to work in partnership with to see these projects to completion. Amongst these, are future upgrading plans of the Kaikoura Airport for example is all part of preparing Kaikoura to become a year-round tourist destination in the near future (O'Connell, 2017).

2.7 Summary

From identifying the location of this case study to discussing the pre earthquake attractions and post-earthquake impacts along with looking at the social history provided a platform of information to understand the relatively small sized district Kaikoura is and the local communities' dependence on Tourism for their source of income.

Kaikoura witnessed government and non-government support after the earthquake and these were evident in the road works along SH1 and the rail and immediate responses and evacuation aid the local communities received were a clear indication of Kaikoura's resilience to natural disaster.

The earthquake's physical impacts however, identified in this chapter, can be seen as positive contributions towards this study's geopark concept that would ultimately contribute to the revitalisation of Kaikoura's local economy should these earthquake impacts of geological features become future geo-sites. A body of literature will discuss the potentials of geological heritages and how these attractions can retrieve a rural setting's economy in the next chapter on literature review.

Chapter 3.0 Literature and Legislation Review

3.1 Introduction

This chapter provides a review of the literature on key concepts investigated in this study, including protected areas, geoparks and geotourism and the relevant laws and regulations linked to this study. The first section of this chapter will look into planning as a profession in the international context before concentrating on the key concepts. The second section identifies relevant legislation that contributes to the planning framework this research has considered applicable to the geopark concept should it be applied for future implementation in Kaikoura.

3.2 Overview of professional planning in the international context

While it was not recognised as planning in a formal practice, Krueckeberg (1983) and Hall (2002) claimed the movements in the 20th century that resulted in the 'Garden City', the 'City Beautiful' and 'Public Health Reforms', were the outcomes of planning processes undertaken as part of these plans and reforms. These reforms were outcomes of the industrialised cities revolution from the 19th Century. While there is a large body of literature that focuses on planning theory, there is no unified meaning for the concept of planning. This was argued by Fainstein and Campbell (2012) who offered four main reasons for why the planning discipline is hard to define independently:

"First, many of the fundamental questions concerning planning belong to a much broader inquiry concerning the roles of the state, the market, and civil society in social and spatial transformation…Second, the boundary between planners and related professionals (such as real estate, developers, architects, city council members) is not sharp: planners do not just plan, and non-planners also plan…Third, the field of planning is decided among those who define it according to its object (producing and regulating the relations of people and structures in space) and those who do so by its method (the process of decision making as it relates to spatial development)" (Fainstein and Campbell, 2012, p2).

Therefore, the discipline of planning is difficult to independently identify without it overlapping its boundaries into other related disciplines. Past decades have seen planners execute methodologies of other related disciplines as part of its process to building developments, communities, and overall societies.

"We also place planning theory at a second intersection: that of the city and region as a phenomenon and planning as a human activity. (…) Planners not only plan places, they also negotiate, forecast, research, survey, and organise financing (…) the result is that the discipline of planning is influenced by a wide

variety of procedural and substantive ideas beyond its own disciplinary boundaries" (Fainstein and Campbell, 2012, p5).

Since the development of this discipline in the 1980s, planning has often been administrated by governments using a top-down approach - what Friedman referred to as "*planning had always been understood as an activity of the state*" (Friedman, 2008, p3). Other activities related to the discipline of planning either controlled or partially controlled by the state include the establishment of territorial authorities, urban developers, surveyors etc. (Friedman, 2008).

Planning has evolved over time and modern government now recognise that more satisfactory outcomes can be achieved through public input in the planning processes. This has meant that government needed to shift to a collaborative approach referred to by Friedman (2008) as Social Transformation Planning. Social Transformation Planning introduced the involvement of the public and the public interest of many actors including the interests of the private actors into the planning process of a society. Collaboration saw the involvement of the public and their interest weighted in levels of impacts and influences toward the government's overall decision making at the end (Friedman, 2008).

3.3 Overview of planning in New Zealand

In New Zealand, planning of cities and regions are governed by local government, a level of government under the parliament and central government. While there are other bodies (unitary councils, regional councils, territorial authorities of district and city councils)relevant to the local government level, this current study is focused exclusively on territorial authorities (cities/districts councils), to understand the responsibilities and the functions planners and their planning departments hold (Cheyne, 2015).

Overall, in the planning context, the operational functions of cities and district councils in New Zealand exceed those of regional councils. These responsibilities and duties include activities related to community well-being, development; public health and safety, physical infrastructure, recreation and cultural activities and resource management (Cheyne, 2015, p 193). Collectively, these functions are carried out to achieve the purpose of the Local Government Act (LGA) 2002 set out in section 10:

"The purpose of local government is –

a) *to enable democratic local decision making and action by, and on behalf of, communities and*
b) *to promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future."*

The inclusion of public participation in the planning process was an achieved outcome of statutory changes since the 1980s. To encourage 'greater openness, transparency, and responsiveness in how councils assessed activities, was one change implemented via the LGA 2002 that required councils to develop annual plans and long term plans that included public involvement (Cheyne, 2015). Cheyne's research reflects recent events and happenings in Kaikoura since the 2016 earthquake. Since the earthquake, the Kaikoura District Council has worked to recover the district's economic and social fabric. The Council sought assistance from Christchurch City Council and held community talks to finding solutions to recovery.

This resulted in the Reimagine Kaikoura District Recovery Plan adopted by Council last April, 2017.
This Reimagine Kaikoura district recovery plan is an example of a long term plan governed by the LGA. It is the responsibility of the local council to provide for its local community and after a natural disaster, Kaikoura District Council adopted a long term plan. According to Cheyne (2015), both annual and long-term plans go through the special consultative procedure set out in section 83 of the Act. The exact planning process Reimagine Kaikoura had gone through before it was adopted in April, 2017.

In summary, planning in the international context and in New Zealand was relevant to consider in this dissertation particularly for two reasons: i) it assisted in understanding the theory behind the role of planners and the planning processes which issued to guide the analyses of results later in this report and ii)it is green light indicator toward the geopark concept and its possibilities of been adopted in the Kaikoura District's road to recovery from 2016 post-earthquake disaster. The following key concepts outline these possibilities.

3.4 Overview of protected areas and the IUCN guidelines

The conservation of Earth's ecosystems, and the biodiversity of species and habitats these support, has many utility values possible of generating beneficial outcomes if planned correctly (Cardinaleet at, 2012; Stolton & Dudley, n.d). Complementary to many urban and rural planning approaches is a systemic approach to the reservation of public land and water for conservation and enjoyment purposes, such as protected areas.

Protected areas are a cornerstone of biological conservation strategies (Salazar & Gaston, 2010, p808), and provide important social, cultural and economic outcomes in the form of recreation and tourism (Eagles et al., 2002). In today's urbanised world, these protected areas are challenged to play a vital role in protecting biodiversity from human influence and activities that exploit and transform the natural earth. Salazar & Gaston (2010, p808) described the establishment of the concept on a global scale as "the great success stories of conservation action, the nature of conservation has become a globally significant human endeavour"

Many contemporary societies have planned and established protected areas on the basis that this is an investment into the future. Stolton & Dudley (n.d, p147) identified substantial evidence of protected areas acting as a useful tool, shielding ecosystem biodiversity and vulnerable species. The 2016 protected planet report recorded 217,155 formally recognised protected areas (202,467 terrestrial and 14,688 marine)commonly characterised as land/marine reserves or national parks and this recorded figure only refers to recognised protected areas only and excludes geoparks (UNEP-WCMC and IUCN, 2016).

3.4.1 IUCN – Protected areas best practice guidelines

Established in 1956, the IUCN organisation promotes the biodiversity of the natural earth. For this dissertation, the concept of protected areas is essential to determine whether their guidelines might potentially complement the geopark proposal for Kaikoura (IUCN, n.d). IUCN is the world's largest global environmental network working in over 160countries to develop knowledge about biodiversity and facilitate global conservation projects (IUCN, n.d). From the perspective of planning, it is important to acknowledge that the IUCN provides global guidelines to governments and conservation agencies on a wide range of themes relevant to the development and management of protected area systems. Table 1 identifies the current guidelines.

Table 1 IUCN Current Guidelines (source: https://www.iucn.org/theme/protected-areas/publications/best-practice-guidelines)

1. National System Planning for Protected Areas	**2. Economic Values of Protected Areas**
3. Indigenous and Traditional Peoples and Protected Areas	4. Guidelines for Marine Protected Areas
5. Financing Protected Areas	6. Evaluating Effectiveness
7. Transboundary Protected Areas for Peace and Co-operation	8. Sustainable Tourism in Protected Areas
9. Management Guidelines for IUCN Category V Protected Areas Protected Landscapes/Seascapes	10. Guidelines for Management Planning of Protected Areas
11. Indigenous and Local Communities and Protected Areas	12. Forests and Protected Areas
13. Sustainable Financing of Protected Areas (2006)	14. Evaluating effectiveness: a framework for assessing management effectiveness of protected areas (2006)
15. Identification and gap analysis of key biodiversity areas: targets for comprehensive protected area systems (2007)	16. Sacred natural sites: guidelines for protected area managers (2008)
17. Protected area staff training: guidelines for planning and management (2011)	18. Ecological Restoration for Protected Areas - Principled, Guidelines and Best Practices. (2012)
19. Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas (2012)	20. Governance of Protected Areas (2013)
21. Guidelines for applying protected area management categories	22. Urban Protected Areas (2015)
23. Transboundary Conservation: A systematic and integrated approach (2015).	24. Adapting to Climate Change, Guidance for Protected Area Managers, and Planners (2017)
25. Wilderness Protected Areas: Management Guidelines for IUCN Category 1b protected areas (2016)	

These guidelines have assisted establishment of protected areas and supported management operations to sustain nature conservation long term. Formally recognised protected areas come in different forms inclusive of national parks, nature reserves, community conserved areas and wilderness areas to name a few. The intentions behind nature conservation include conservation of biodiversity and nature's ecosystems – simultaneously contributing to people's better livelihood on a local scale. Conserving these natural resources benefits local communities in numerous ways such as through food supply, supply of medicine ingredients, clean water supply and even form natural barriers from impacts caused by natural disasters. More so, these protected areas help preserve local cultural customs and provide a setting for recreational purposes and tourism attractions (IUCN, n.d; Lausche, 2011).

3.5 The concept of geoparks

While the IUCN has supported the development of PA systems globally since 1956, the concept of geoparks is a relatively new concept that has the potential to complement and enhance the benefits of existing PAs. Introduced in 1991, at the Digne Convention, the geopark concept highlighted the proposition of and protection of natural heritage, and promotion of geological values through a global network of territories (Jones, 2008). The concept encompasses three primary components: i) An area must possess significant geological heritage; ii) There must be an existing economic development strategy in place with the support of the geopark to encourage and promote local business and; iii) The area must welcome scientific research and education opportunities (Turner, 2006; UNESCO, 2017).

UNESCO emphasises that the geopark concept shares a direct link with sustainable development in order to sustain the life of the geopark, the local economy and livelihoods of the local community (UNESCO, 2017). Geoparks encourage sustainable development through tourism activities such as tour guiding operations, installation of cycling and walking trails, establishment of geology-inspired themed restaurants, souvenir stores, accommodation in the form of local lodges and backpackers, motels and hotels etc. The first geopark network was recognised when four European nations formed the European Geoparks Network (EGN). Several years later, the first global geoparks conference was held in China in 2004. This was an indication of the potential interest in geoparks as a working concept. Notwithstanding these milestone events, geoparks remain relatively novel and its application has yet to stretch across the globe (Jones, 2008; Zouros & Mckeever, 2009; Mckeever et al., 2010).

It is important to understand that geoparks are not limited to visiting and studying the different types of rocks. Rather, geoparks expand to incorporate the wider environment inclusive of the local community

who maintain, conserve, and contribute towards sustaining the earth's heritage while at the same time earn a living from it (Lochaber Geopark, 2011).

Farsani et al (2013, p1)argued that geoparks are "geological heritage, like other nature heritage, that offers numerous tourist attractions, natural resources and landscapes to visitors" while Fauzi and Misni (2016)sought the concept of geopark as an approach of conservation innovation that underlined the importance of public education, science and research and sustainable development for the local economy. Additionally, Fauzi and Misni (2016) described two principal components believed to be a planning tool for a geopark development: i) the proposed land area must hold a few geo-heritage sites in possession of high significance value and history at national level or international level and; ii) the proposed land area's history must hold strong geological and landscape connections. These components not only contribute to the life of a geopark but draw in attractions and development of tourism activities through the concept of geotourism.

3.5.1 Geotourism

The term 'geotourism' was coined introduced in 2002 by the Travel Industry Association of America and the National Geographic Traveller Magazine. Geotourism and its sustainability principles was later formally adopted in 2008 in the United States when five American government agencies joined the National Geographic Society(Farsani, Coelho, and Costa, 2011).

Looking back at the geotourism definition, section 1.1.2, geotourism is uniquely concentrated around the geological attractions (Dowling, 2011); however, this does not necessarily remove other heritage from the tourism attractions listings. The development of geotourism supports the geopark through its related activities. This form of tourism has created innovation at the local market scale boosting the local economy. Geotourism activities provide learning opportunities to tourists and local residents alike through acquired knowledge about the significance of the geology at the geo-sites, its landscapes, and the natural processes behind their very existence (Dowling, 2011).

> *"geoparks are pioneers in the development of geotourism. It is noteworthy that through involving local communities in innovative strategies and geomarketing such as creating geotours, geoproducts, geomuseums, geosports, georestaurants and geobakeries, geoparks try to promote the local economy and public knowledge about geology*" (Farsani et al., 2010, p.68).

This form of tourism acknowledges and appreciates the value of the natural and physical environment. Like the geosites, geotourism possesses aesthetic values that attract visitors to the site and ultimately these visitors participate in the geotourism activities of the park. Early findings (Gary, 2008, as cited in Farsani, Coelho, and Costa, 2011., p.69) argued that one popular international geotourism example of relevance is

the Grand Canyon West Sky Walk, a clear depiction of geotourism as an opportunity for sustainable socio-economic activities. Officially opened in 2007, the Grand Canyon Sky Walk is located on the west region of the Grand Canyon National Park in Arizona, United States of America. This sky walk geotourism attraction is managed and operated by the native Hualapai tribal community. This geotourism attraction not only attracts 1 million visitors on a annually basis but has opened up economic development opportunities within the sky walk facility. These opportunities include; paying a entrance free to visit the glass skywalk facility, dine in at the Sa'Nya-Wa restaurant on the second floor of the facility, enjoy live entertainment of native American dance performances etc (My Grand Canyon, 2017).

Figure 2 Grand Canyon Skywalk (source: https://www.superiortilestone.com/project/grand-canyon-skywalk/

Equally, the concept of geopark and geotourism relies on the geology of an area to promote the heritage it has for awareness, acceptance and acquiring knowledge from the local community level. Having the knowledge in geological background at the local level immensely contribute to the operations of both the geopark and geotourism industry (Fauzi and Misni, 2016).

One recent application of the geopark concept is the Arxan National Geopark within the Arxan-Chaihe volcano area, in China (Wang et al, 2014). The geological heritage features igneous rocks, volcano-related landscapes - lava landscapes, Mesozoic volcano landscape, and springs landscape (both hot-spring & cold-spring). Wang et al., (2014)demonstrated that geotourism complemented the volcano area geopark in the following ways:

- **Geo-conservation**: Provided staff training to educate particularly geopark managers about the geological heritage and scientific value it represents to the open public.
- **Safety infrastructure:** Through operating a tourist service centre or having a tourist trail. Other features included stair ways, viewing platforms with information panels and fence.

- **Interpretative System:** An example the literature provided was opening a geopark museum. That will put on display the geopark characteristics, scientific values, the benefits, and inconvenience of its very existence showcased through its landscapes and culture.
- **Community Participation:** A reflection of active community is evident through the domestic business establishments that complement the Geopark such as naming a business after some geological feature e.g.: hotel name or restaurant regarding the name of the restaurant or name of dishes served in restaurants. Business can also fancy inclusion of local souvenirs.

In a related study, Wang & Tian (2013) concentrated on an earthquake relic geopark "Qingchuan Earthquake Relic Geopark (QERG)". The authors of this study illustrated how the devastation from a natural disaster had brought together two neighbouring rural communities to establish the QERG in commemoration of the "Big Tangshan earthquake". Both Donghekou and Qiaoyudong geo-areas form the boundaries of QERG that had become China's first earthquake relic geopark recognized in November 2011. The geological characteristics encompassed as part of the geopark include "an earthquake-induced barrier lake, landslides, ground surface deformation, modern construction sites and the Qiaoyudong Karst cave group" (Wang & Tian, 2013, p.460).Both these studies in China share geological characteristics with the Kaikoura District's context.

3.5.2 UNESCO criteria for global geopark destination

The UNESCO's Global Geoparks Network (GGN) acknowledges the dependence of sustaining people, communities and the earth are through appreciating and conserving the earth's geology and landscape. Hence, the reason for UNESCO's initiative in establishing an international framework to ensure conservation management practice (UNESCO, 2010).

These criteria guidelines will guide later analysis of the results from the current Kaikoura study in an attempt to identify and discuss what is appropriate for the district. The UNESCO report titled 'Guidelines and Criteria for National Geoparks seeking UNESCO's assistance to join the Global Geoparks Network (GGN)' provides aspiring geopark applicants a set of criteria to comply with when applying to become an active member of the GGN(UNESCO, 2010).The six criteria are summarized in Table 2 below; (UNESCO, 2010).

Table 2 UNESCO Criteria for Aspiring Geoparks to become GGN members. (source: http://www.europeangeoparks.org/wp-content/uploads/2012/03/Geoparks_Guidelines_Jan2014.pdf)

CRITERA:	**DESCRIPTION:**
Size and Setting:	Well-defined boundaries that are preferably large enough in land and water size capable to provide development services both economic and cultural. Setting will mainly display the national importance of the proposed Geopark with its rich geological history promoting with it the ecological, archaeological, historical, and cultural sites that together establish a geopark. (UNESCO, 2010, p3)
Management and local involvement:	A requirement under this criterion, is the applicant (country) of the aspiring geopark must before applying have in existence an efficient operational management system and existing geological and non-geological features (within the proposed boundaries) that is available and accessible to visitors. There must be evidence of living community participatory, public authorities' involvement and financial support and achieving to give effect to relevant local and regional policies. Strong bottom-up collaboration approach will involve all "public authorities, local communities, private interests, and both research and educational bodies, in the design and running of the Geopark" (UNESCO, 2010, p3).
Economic Development:	the application must have need of formulating economic activities within the sustainable development framework that should encourage local businesses to establish. These vary into different fields from small souvenir business, to restaurant/accommodation businesses, educational training courses, new jobs through geo-tourism initiatives and so forth (UNESCO, 2010).
Education:	Evidence provided in the application should identify the strategic tools that the country of the aspiring geopark will use to relay geo-scientific knowledge with its surrounding ecological and cultural concepts to the public. This includes the contents executed by tourism programmes, employing competent staffs, local population engagement, networking with media representatives and key decision makers. Residents engagement can be further diagnosed to represent school excursions, facilitating seminars for information sharing and public awareness purposes (UNESCO, 2010).
Protection and Conservation:	Concerning the aspiring geopark UNESCO has no legislations enforced in comparison to a country's national park/nature park. Regarding legal protection, application must clearly state the involvement of local authorities and their

	responsibilities in ensuring security over the geopark through its local legislation. (UNESCO, 2010)
The Global Network	Require applicant's to be aware of the GGN. Applying and becoming a GGN member opens global opportunities of networking, information and expertise sharing and benefits. Features of a GGN includes preserving the geological heritage, educating the broad public, ensuring there is sustainable development, fostering multi-cultural bridges, stimulate researches and lastly, contributing actively to the network. (UNESCO, 2010).

It is worth noting to obtain this UNESCO geopark status and GGN membership is completely voluntary. Countries of aspiring geoparks who wish to apply for UNESCO status will need to meet each of the six criteria listed in Table 2 above.

UNESCO will need evidence accompanied with application as proof of a well-defined geopark boundary (as referred in criteria 1), an existing management team to oversee the daily operations and involvement of the local communities (as referred in criteria 2). There must also be evidence of the geopark's economic development framework, to complement the geopark such as proposals for upcoming restaurants, souvenir outlets or accommodations etc (as referred in criteria 3). In terms of education criteria 4, UNESCO required a provision of a planning strategy outlining the approaches the geopark will take to educate the public. Educating local tour guides to be informative when on the job, geological exhibitions in museums or teaching its scientific importance in local schools are some examples of educating the public. In the long run, these criteria contribute to the conservation of the geopark that is referred to in criteria 5, primarily the goal UNESCO looks out for in this criteria is these host countries ability of securing the support of their government to financially support the life of the geopark in a long term plan basis and finally, contribute in any manner through articles or related research publications to the organisation and also actively contribute to the GGN commitments.

3.6 Review of New Zealand legislation

This section reviews the laws and regulations that shape the planning framework of this study. These laws include: i) the Resource Management Act (1991), associated with councils' planning departments through resource consent applications, review of or amendments to district plans and/or policy statements; ii)the Local Government Act (2002), which covers the purpose functions responsibilities and planning processes (annual plans or long-term plans), considered and assessed at the local government level; and

iii), the Conservation Act (1987) for all land reserves and conservation parks under Department of Conservation's (DOC) jurisdiction. Each of these laws is reviewed below.

3.6.1 Resource Management Act 1991

In New Zealand, there is no separate legislation for urban development and planning. The Resource Management Act 1991 (RMA) is the main legislation that covers both environmental matters, and planning. The purpose of this Act is to promote the sustainable management of natural and physical resources..The Act includes the National Policy Statement (NPS) and National Environmental Standards (NES) to which any development proposed under the Act must give effect to, the purpose of the RMA 1991 and to the NPS and NES. The purpose of a district plan, its contents, rules, and changes are outlined under section 72, 73, 74, 75 and 76 of the RMA (1991). For this study, the resource consents application process set out in Part 6 section 88 contributes to the planning process of an aspiring geopark for Kaikoura and this will be outlined in chapter 5 of the dissertation.

3.6.2 Local Government Act 2002

The Local Government Act 2002 (LGA) is the principal regional and territorial authorities act. The purpose of this Act is to provide for democratic and effective local government that recognises the diversity of New Zealand communities. Hence, regional and territorial authorities are responsible and held accountable to provide for and promote their local communities. These local authorities are required to provide a framework and hold powers under this Act to provide for and meet the needs of both their current and future community's needs. These are through local infrastructure, and public services.

All local authorities' proposals into the long-term plan must be processed according to section 93 (5) using the special consultative procedure. According to section 93 (4) & (5) changes to long-term plans are allowed and must also use the special consultative procedure.

Any proposal to establish a geopark to boost geotourism in the Kaikoura District would need to be adopted by the Kaikoura District Council under that local authority's long-term plan to benefit all, the local authority, the community, and local businesses. The following sections of this Act will be analysed in the results chapter 5 under the planning processes of this research study:

- Part 2, subpart 1, 2 and3: Purpose of local government, role and powers of local authorities - Section(s) 10, 11, 12, 13 and 14
- Part 3, subpart 1 and 2: Structure & reorganization of local government – section(s) 21, 23, 27 and 27B
- Part 6: planning, decision making and accountability – section 93

3.6.3 Conservation Act 1987

The Conservation Act necessitates a range of statutory planning processes for DOC. These include DOC's involvement with Conservation Boards and New Zealand Conservation Authority who have roles in developing Conservation Management Strategies and Plans among other documents that govern the use of public protected areas in New Zealand. The Act created the State Department of Conservation whose responsibilities include overseeing the functions and management of public conservation land and water across the country.

Part 2, section 6 of the Conservation Act 1987 outlines the functions of DOC which includes:

(a) to manage for conservation purposes, all land, and all other natural and historic resources, for the time being held under this Act, and all other land and natural and historic resources whose owner agrees with the Minister that they should be managed by the Department:

(ab) to preserve so far as is practicable all indigenous freshwater fisheries, and protect recreational freshwater fisheries and freshwater fish habitats:

(b) to advocate the conservation of natural and historic resources generally:

(c) to promote the benefits to present and future generations of—

(i) the conservation of natural and historic resources generally and the natural and historic resources of New Zealand in particular; and

(ii) the conservation of the natural and historic resources of New Zealand's sub-antarctic islands and, consistently with all relevant international agreements, of the Ross Dependency and Antarctica generally; and

(iii) international co-operation on matters relating to conservation:

(d) to prepare, provide, disseminate, promote, and publicise educational and promotional material relating to conservation:

(e) to the extent that the use of any natural or historic resource for recreation or tourism is not inconsistent with its conservation, to foster the use of natural and historic resources for recreation, and to allow their use for tourism:

(f) to advise the Minister on matters relating to any of those functions or to conservation generally:

(g) every other function conferred on it by any other enactment.

Additionally, the Department administrates other related conservation regulations such as the National Parks Act 1980, Reserves Act 1977 and Wildlife Act 1953. In summary, DOC is responsible to oversee all reserved lands, marine areas and national parks for conservation purposes of its existence, flora and fauna and simultaneously perform its department role to fostering recreational development opportunities that allows for tourism attraction benefits.

3.7 Summary

While protected areas are a cornerstone of biological conservation(Salazar and Gaston, 2010), they are also significant visitor enjoyment and economic development opportunities. From a planning perspective, it is imperative to analyse the similarities and differences between IUCN PAs guidelines against UNESCO geopark criteria in order to tell apart why the concept of a geopark is different and why this difference could be a good plan to adopt for Kaikoura.

The IUCN are internationally recognized for providing the best practice protected areas guidelines. These guidelines are imperative to acknowledge and compare against the UNESCO geopark criteria as part of this study's analysis which will be analysed in the later chapters. The UNESCO concept of a geopark outlined in section 2.5 is considered a form of protected areas however; the concept of a geopark is typically more open to developing access, infrastructure, services and visitation when compared to many other protected area designations. The regulations reviewed in this study will be analysed in the results Chapter 5 to provide the planning process applicable for such a proposal to be adopted into a setting such as in the Kaikoura district.

Chapter 4.0 Research Methods

4.1 Introduction

This chapter begins by reiterating the central research objectives and research questions before outlining the methods used in undertaking data collection for the study. Overall, this study used a combination of methods from desktop research, field observations and interviews. Each of these methods is discussed in turn. This study also included the research limitations encountered during the course of the study.

4.2 Research aim and objectives

The main aim of this study was to explore the concept of UNESCO global geoparks to determine whether a geopark concept is fitting and appropriate in the post-earthquake recovery context for the district of Kaikoura. This aim was driven by an interest in the aftermath of the 2016 Kaikoura earthquake, and especially in the potential contribution of nature-based tourism attractions in the region's recovery.

The physical, social and economic impacts of the earthquake have led to the objectives of this study to explore the geopark concept in the search of finding a positive turn around contributions of seismic activities and geo-hazards to benefit the local communities and boost their road to recovery.

These objectives exploring and identifying what qualifies as a geo-site, analysing the scientific importance behind the geopark setting, assessing and understanding the importance of having geotourism to promote a geopark setting, what other heritages do geological heritages complement in a geotourism component. Reintegrating section 1.2 these research aim and objectives were guided by four main research questions (see below) to provide an ultimate statement on whether or not a geopark was appropriate for Kaikoura.

4.2.1 Research questions

1) Analyse the UNESCO criteria and IUCN guidelines and determine how these concepts complement or contradict the geopark concept.
2) Identify and analyse the various heritage values associated with the district's landscapes in terms of their potential relevance to geotourism development.
3) Identifykey stakeholders and relevant legislation and their relationship to the planning process of a proposed geopark concept.

4) Outline the plan making process a proposed geopark concept will be required to comply with under the relevant legislation – RMA 1991, LGA 2002 and Conservation Act 1987

4.3 Methods used

A combination of three methods was used, and each of these methods is discussed below:

4.3.1 Desktop research – relevant documents

The following documents were used and referred to throughout the duration of this study, to understand the study area and the functions of the local government (Kaikoura District Council) that hold regulatory powers over the area. I particularly focused on the Kaikoura District Plan and the Reimagine Kaikoura District Recovery Plan 2017. Other documents included Kaikoura Long term plan 2012 -2022, Earthquake – Prone, Dangerous, Insanitary, and Buildings Policy 2006, and Development Contributions Policy 2015.

4.3.2 Field observations

I spent one week up in Kaikoura conducting daily observations of the natural landscapes and undertaking a basic site attribute analysis. Observations also included, observing existing operational local businesses, movement of people, coming and going and local businesses that are still closed since the earthquake. The purpose for this method was trying to understand from a tourism point of view, where Kaikoura was pre-earthquake event and where it was at the time of my research visit post-earthquake event.

4.3.3 On-site interviews

A small number of semi-structured interviews (see Appendix 1 for sample) were conducted, including with four key informants during the field trip to Kaikoura, and one interview with a Christchurch-based geologist. The interviewees were selected through their professional capacity and relevance of professional work to the nature of this study. Selection was done through telephone and email communications.

All interviews conducted in Kaikoura were facilitated at the interviewee's professional working space, while the last interview was facilitated in another work space in Forbes Building at Lincoln University. Each on-site interview last for about 30 to 40 minutes in length, while the interview held in Lincoln University was approximately one hour. Invitation letters enclosed with a copy of the research information sheet was sent out via emails(see Appendix 2 for sample) after I communicated with these potential participants through telephone. Informed consent forms (see Appendix 3 for sample) were also used to provide participant's anonymity.

Data collected from these interviews were transcribed and later analysed using John and Lyn Lofland's (1995) coding system analysis from their book titled Analysing Social Settings; A guide to qualitative observation and analysis.

4.4 Research limitations

Like all research, the current project has some limitations related to the time and resources available for the study, and the consequently small number of key informant interviews possible. Had resources allowed, additional interviews with The Marae, Te Runanga o Kaikoura, DOC, ECAN and GNZ representatives would have provided greater insights about the most suitable geological sites and the interests amongst tourism operators, local decision makers and local communities and residence to embrace the concept of geopark.

At the fieldwork level, limitations included problems with access to Kaikoura. At the time of the field trip, SH1 allowed access between Christchurch and Kaikoura on Mondays and Fridays only and closed during the remaining weekdays for road repair works. Due to road closure and health and safety restrictions, I was unfortunate and could not to visit the fault line sites or the cave tours. Most land-based activities were still closed after the November earthquake at the time of my visit. Not having to visually witness these changes in landscape during my field trip reduced my ability to capture information about some of the potential geopark sites. However, when all my interviewees boldly stated that none of them had seen these landscape sites indicated the level of impact and restriction it has caused to the local communities. This has left this study to rely on photographs released by online media sources

4.5 Summary

In summary, the combination of methods used was necessary to collect primary and secondary data for this study. There was overlap and re-emerging data resulting from the observations, to the interviews that reflected information gathered from desktop research. Overall, these methods, helped collected the data that was later presented as the research results and analysed to address the research objectives of this dissertation.

Chapter 5.0 Research findings

5.1 Introduction.

This chapter presents the results drawn from the combination of methods described in the previous chapter; in the study's intention to bring together the body of literature in Chapters 2 and 3 and the implications of these on the initial research questions of this study: The following sections sets out the results from the field observations and interviews carried out during the field trip (24/7/2017 to 28/7/2017) and results from the document analysis before outlining the results drawn in from the planning process framework.

5.2 Field observation

The purpose of conducting the field observations was to have a fair understanding of where Kaikoura was before the earthquake, the types of tourism activities and local businesses operating and thriving and where Kaikoura stood in terms of tourism attraction opportunities, accessibility to these sites, local businesses operations post-earthquake. The purpose was simply achieved through field observations, whatever was noticed closed since after the earthquake was a clear indication of the businesses lost, the impacts felt from the seismic activities of the earthquake etc.

5.2.1 Travel to Kaikoura

The journey from Christchurch to Kaikoura by road reveals many changes in landscape, from the flat plains of Central Canterbury to mixed elevations, spiral turns and bends that cut through mountains. Much of the land use is agricultural, although conservation and tourism enterprises are also evident.

JoiningSH1, within the district boundaries along the east coast gave two outstanding scenic views (see Image 1 in Figure 3) one, the view of rocky landscapes on the inner road lane and two the view of the open ocean on the outer road lane side of the SH1 was spectacular.

Damages to SH1 and the rail transportation infrastructure were observed along the way. There is clear evidence of on-going soil erosion and land slips from the mountains, down to the coastlines and these were still visible on the ground (refer to Image 2 in Figure 3). Repairs to the SH1 were under construction at the time of observation, with multiple single-lane sections that continue to cause traffic and transport delays, extending time spent along the coastal SH1. The rail line along the coast is also badly damaged.

The earthquake-induced raised sea bed is a noticeable new addition to the coastal landscape that stretches from Oaro to Mangamaunu and continues up north along the coastline. The exposed seaweed and stranded shell fish provide colour contrast from the surface features along the coastline. The Kaikoura

Cave Tours site was closed to the public (during my time of travel) due to damages it had sustained from the earthquake (refer to Image 3 in Figure 3).

Observations on the road noticed, Kaikoura has an existing functional helicopter and sea plane park site just outside of the township periphery (refer to Image 4 in Figure 3). The closer the travel got to the township more accommodations was observed on both sides of the road ranging from bed and breakfast, backpackers and lodges to motels and hotels. A few eateries/diners were also noted (refer to Image 5 in Figure 3).

Figure 3 Spectacular Views of Kaikoura's Built and Natural Environments (source: Google images)

5.2.2 Kaikoura Peninsula

Prior to the earthquake, the Kaikoura Peninsula was already a popular tourist attraction site (refer to image 2 in figure 4). The Peninsula offers a natural appealing scenic view that reflects the unique physical landscape of Kaikoura (refer to image 3 in figure 4). Managed by DOC as a naturally and historically rich resource that offers tourists attractions. The peninsula offers a walkway path and tracks that lead down to the coastlines on either side at Point Kean and from South Bay. Currently, there are informative signs installed for visitor information purposes, car parking spaces and viewpoints overlooking the Peninsula and the sea (refer to image 1 in figure 4). The geology encompasses the Peninsula as a whole that has also become home to baby seals at the seal colony (refer to image 5 in figure 4). This hasprovided an opportunity for visitors to view seals up close. The raised sea-bed is also visible from this vantage point.

Figure 4Kaikoura Peninsula (source: google images)

5.2.3 Kaikoura town centre

The town centre is small, and tourist-focused. Located on the coast, the town is separated from the coastline by a natural stream. There is also an old railway over bridge that still stands post-earthquake. Walking through town and passing the retail outlets, it is clear that many businesses have either a "We have moved, relocated" sign posted on the front windows, or businesses had closed since the earthquake. For example, Fish Tank backpackers and Lodge in the hub of the town, was still closed due to earthquake damage. The Kaikoura District Council no longer occupies its initial office building and has relocated to the Kaikoura Civic Centre that also houses the town's local library and museum.

Directly opposite the museum is the I Site Information Centre for tourist information, activities and tours. Parking space within the town centre is also made available and public convenience with an easy bridge to cross over the stream and onto the coastal foreshore. This foreshore leads to the Whale watching tours office and a Paua Souvenir shopping outlet. Commercial businesses observed as still in operation included supermarkets, fast food outlets, cafes, pubs and restaurants, salons, banks, clothing stores, souvenir shops, an ice cream shop, antiques, pharmacy, and a post office.

The Seaward Kaikoura mountain ranges serves as a backdrop to the township, and the marine life attractions offer visitors the chance to see seals on the peninsula, swim with the dolphins and take a whale watch tour. There are also air-related activities, kayak and rafting activities.

Most if not all these activities details are available at the I Site Information Centre. Lastly there are trails and tracks for walks, cycling and even bikes, some short walk tracks are located within the town centre

and others while you walk out towards the peninsula. There are others out in the outskirts of town, some of which remain difficult to access due to road closures.

Figure 5 Views of Kaikoura's Town Centre (source: Author)

This method provides a visual interpretation to understand where Kaikoura's built environment and tourism related socio-economic activities stood pre-earthquake and how the earthquake's impacts changed all of these post-earthquake. Observations from the travel to Kaikoura, at the Peninsula and within the town centre clearly summarised how infrastructure was badly damaged and how tourism operations continued to encounter challenges. These challenges were observed through a number of shops, accommodations and land-based tours that still remained closed at the time of the field visit. This method is a clear indication of Kaikoura's need to retrieve their tourism industry and unexpected decline of their local economy and a geopark proposal could just be the district's future to revitalise its local economy.

5.3 Key informant interviews

In order to understand and get a more in depth information about the potential for a geopark in Kaikoura, five interviews with key informants were undertaken between July 24th and August 29th 2017. Below are the interview results, presented in re-emerging topics analysed from the interview data.

5.3.1 Support for the geopark concept

The key informants were asked about the potential of a geopark for Kaikoura that would contribute towards its economic and social recovery. A local school principal for instance was positive about the possible education benefits for the town, should a geopark be established in the future. In his discussions, he commented *"it will be an opportunity that you don't want to miss really. It will also be an opportunity to science and the scientific community. This has gotten the school to connect with the universities; we are remote from the universities so this opportunity would mean they come to us. This is great for us, for our students' interest to follow in future"*.

Furthermore, the school principal noted that schools from beyond the immediate Kaikoura district would benefit from access to such an entity; *"there will be a lot of interest in a geopark – to attract school excursions. In terms of geology, geomorphology they are always learning about what happened in the past. But these students here, Kaikoura people, have personally experienced the change that makes it significant. They understand the changes of these natural forces and they have felt them. They actually understand how powerful they are and as a local resident, having to go through an event like the earthquake is quite dramatic but it's also quite important for people to see the positive things that come out of it…as well as the bad things"*.

A KDC representative was similarly enthusiastic about the geopark concept, noting the alignment with his organisation's commitment to sustainability, and the past success of tourism in the town; *"From reading about the concept, it definitely fits into a lot of the work that's been done here in Kaikoura. Particularly, in terms of sustainability. And the council has been keen to adopt eco-tourism as a means to distinguish Kaikoura from other settings in New Zealand. This includes, going through the earth check auditing. Council has been doing this for quite a while now and I'm sure the council will be sure to following through that process. It certainly, does fit a lot with the direction Kaikoura is heading. So, point of view, I could see it been favourable provided the right support is in place. I could certainly see the council looking at the concept favourably"*.

A local attractions manager also had a positive response about an aspiring geopark concept for Kaikoura; *"Yes, I'm 100% behind the concept. I have been looking at what's involved in terms of the geologies and science researchers since the earthquake. There are not much geo-sites visible globally, and Kaikoura,*

such a small district has so much features in one place. Having an aspiring geopark concept status would enhance and complement the current attractions already in place and they're all linked the geology, ecology and culture of Kaikoura".

A Kaikoura tourism industry representative, when asked whether a geopark concept post-earthquake would be considered a future focal point, agreed that Kaikoura needed another environmental attraction in its road to recovery, and thought there was *"enormous potential to complement the marine offering with more land-based walking tours".* Furthermore, she added: *"It makes sense for Kaikoura to capitalize and maximize its exposure to New Zealand and international visitors with the changes in the landscape, foreshore and raised seabed. New tours featuring changes in the landscape could create a new form of education tourism. We also see further opportunity for viewing the effects of the earthquake from the air".*

5.3.2 Public involvement

The interviewees were asked to discuss their perspectives on what the project's public participation phase and give their thoughts on their involvement throughout the project. The response received had identified various stakeholders the key informants thought were important actors to be involved in the project life. Their opinions also presented legislations they thought were relevant and contributed to the planning process framework necessary to process the proposed geopark concept should the plan be considered with KDC.

Key stakeholders: Discussions held during the interviews with my key informants brought up names, the participants mentioned stakeholder names where KDC representative emphasized that it is important to gain the support of the wider community from the early stages of any major local initiative.

Table 3 Identified Key Stakeholders

No:	Key Stakeholders:
1	The Marae
2	Ngai Tahu Kiwi
3	The community at large, example; Clarence settlement
4	Tourism sector
5	Land owners – DOC is the main proprietor of Kaikoura – a lot of the land north Kaikoura, is DOC Mt. Fyffe Conservation Park extends on the other side of the mountain is the Clarence River.
6	Statutory legislation
7	Education representative, example; U.C research station here so they can be a stakeholder
8	Science researchers
9	Kaikoura District Council
10	Environment Canterbury

The Canterbury geologist interviewee also shared similarities with KDC representatives: *"Yes, I think that's the key thing, you have to bring everybody in first on the table first and say well this is the concept and how do you think this concept can work for you and do you want to be involved and yeah take it from there. I guess to get the right information is the key thing. That's why for us (Banks Peninsula geopark Project Team) it's been a very slow process. Reaching out to each of the entities on the Peninsular those that have an influence on the Peninsula & also the bureaucratic as well to bring them along and not just say; Right this is how we're going to do this. You are going to do this, this and this. Instead our approach was right this is the concept and steps and we take the first step and work on getting everybody on board. The working progress of trying to get everyone in the community on board to support the project especially farming communities and iwi. It's a lot of work but it's crucial to get them involved from the initial stages".* The museum manager stressed the importance of Te Rūnanga o Kaikoura to be informed and involved.

It was clear from these results, the local professionals in Kaikoura acknowledged the importance of collaborative involvement and Council's process framework. The interests of local communities and local businesses are important to take on board their involvement and contributions are equally important to consider in the project.

Legislation framework and planning process: When asked about the legislative framework and planning process Kaikoura District Council would consider processing the geopark concept, KDC representative in his response had the following comments: *"Yeah, I guess it would depend on how the geopark concept would put in place the protection. Certainly, the RMA and the planning process, district planning processes would probably the most obvious. My understanding if you're heading into the conservation state DOC land would fall under the DOC legislation and their management plans and that sort of things would be relevant".* He further discussed, *"I wouldn't see Council driving it without some push from the community. If the community was there, the businesses were on board, the landowners were on board. If it were given a geopark status then the district plan would be one of the relevant mechanisms to I suppose to put in place protection features".*

5.3.3 Education component

The local school principal discussed the current geography course the school offers, studies the natural physical landscapes but most of the work is associated with the marine environment.

He further added, "*the school is involved with DOC, UC and Otago University in some of the research and at the moment, students are going to be involved in on-going research with what's changed in the marine environment as a result of the raised sea bed from the earthquake. Additionally, the school is also*

involved in things like re-seeding Paua, for the Paua Fishery and doing statistical collection of data through our science and mathematics programs. Since the last earthquake event, research studies are more on understanding the landscape we have here in Kaikoura, how it originally formed and what were the natural forces that created the environment. But it is worth pointing out; research studies and related programs were already existing before the earthquake event last November".

Another educational component essential for any rural setting interested in obtaining a geopark status is to show case and display exhibition through a museum. Kaikoura already has an existing museum that holds a lot of historical, archaeological, ecological, and geological information (refer to figure 6). According to the museum manager, "*the museum is more than just a museum. It is filled with educational information that is informative and are background data to running programs held in the museum. It is also a place, which brings professionals together to hold talks, provide displays and exhibitions. The museum might be small in contrast to other museums around New Zealand, but there are always brand-new items and we also hold a lot of facts. These programs hosted by the museum also get in the new generation interested in the environment, the physical landscape and sustainable tourism of our district. It is important for us to promote low-impact tourism and at the same time, look beyond the current attraction marine attractions"*

Figure 6 Informative displays and Exhibition recordings displayed in Kaikoura Museum (source: Author)

5.3.4 Potential geo-sites appropriate to consider for a future geopark

The heart of geotourism activities is to promote the geo-sites that form the geopark. These sites must possess scientific importance and facilitate platforms, geo-trails and informative educational details of the geological heritage of the site. Having their own interpretations to describing these potential sites, the local School Principal, discussed the potential attractions can be sought from sites that experienced the impacts from the earthquake *"landscape changes that happened along the fault lines mostly up the Clarence River. These sites do not have access at the moment; we have only seen images taken by helicopters. The uplift along the coastline from Oaro to Mangamaunu that is far worse further up north of the coastline. There are also changes to some of the Catchment areas – due to slips".*

When asked to discuss the significant sites, KDC representative in his discussion stated *"The Kaikoura Peninsula is one potential site, its popular because it's close to town and very accessible. There is also a lot of features at the Peninsula from the seal colony to archaeological sites of early Maori settlements and even European resettlement also focuses on the peninsula and the whole whaling station. Another site to consider is the river catchments here are quite short; it's unique in a regional level in Canterbury and the East coast. The sequence of the mountains to the sea, I think is unique. It is an outstanding landscape because it's unique. The highest mountain peak is estimated around 2.5 thousand meters and reaches out to the canyon that's about 3 thousand meters underwater. The range of height in such a small space is apparently quite unique. The Canyon South Kaikoura is already a marine reserve."*

The Museum manager believed the following sites have potential to complement each other especially, after the impacts of the earthquake. *"The major fault lines, major sea bed uplifts that was raised about 1 to 2 meters and the further north, the worse the uplift is raised. The back-country bluffs, visibly exposed, and the exposed fossils down the coast caused from the slips. And especially, Clarence River slips have exposed rocks and up speed the force of water in the river that has improved rafting activities down river. Also, the Kaikoura canyon, as it is rich in resources".*

The tourism industry representative couldn't comment on the entire district, as most places were still access denied or restricted after the earthquake and acknowledged that certain land-based tours were still closed for business. However, sites were only drawn from parts of SH1 that were currently accessible compared to the north road side. *"New sites include, the new surf beach along the Esplanade, raised seabed all along the Esplanade to Point Kean seal colony (Kaikoura Peninsula Walk), you can now walk along the foreshore from Point Kean to South Bay, raised seabed all around the South Bay area, new marina being developed, Kaikoura Coastal Walk south of Kaikoura and Glenstrae 4WD bike farm tours already featuring in their tours changes in the landscape".*

The Canterbury geologist mentioned the following significant sites for Kaikoura *"The peninsula geologically speaking is just phenomenal, the back tilted terraces all these result from the deformation natural processes. Then there is Mt. Fyffe, Hopes spring, Whalers Bay and the Whaling station that holds archeological significance as well.*

The Fyffe house complements the geological significance of the peninsula as it is both of an historical feature with archaeological significance because the foundation of the building is made from whale vertebrates' and there's the Kaikoura Coastal platform. But more importantly, Kaikoura now has all those fault sculpts as new features and it will be a great way of getting farmers to preserve these landform features. Possibly, fence it off and use as an educational component to display the strength and impact of the earth quake."

Table 4 Compiled list of potential geosite identified from key informants

Potential Site's Name	Geological Features	Archaeological Features	Ecological Features	Geotourism Attractions
Ruptured Fault lines	○ Fault Sculpts ○ Back country bluffs	Unknown	Unknown	○ Fence off part of these for public platform viewing. ○ Geo-trails, Bike tours.
Sea bed uplifts	○ Raised sea bed	Unknown	Unknown	○ Witness its presence.
Kaikoura Peninsula	○ Seal Colony ○ Raised seabed walkway	○ Whaler's Bay ○ Whaling Station ○ Fyffe House ○ Early Settlements' sites	○ Seal Colony ○ New Marina	○ Guided tours / walk/cycle tracks to all three heritage sites.
Kaikoura River Catchments	○ Slips Up Clarence River ○ Raised limestone rocks in parts of Clarence River	○ Exposed archaeological remains, due to slips	Unknown	○ Guided Tours, ○ Geo-trails, ○ Rafting activities
Kaikoura Canyon	○ Submarine Canyon	Unknown	○ Sperm Whales ○ Dolphins	○ Whale watch tours ○ Swim with the dolphins tours

Kaikoura Ranges	○ Inland Ranges ○ Seaward Ranges ○ Mt. Fyffe	Unknown	Unknown	○ Helicopter Tours ○ Ski trips
Exposed Fossils along the Coast	○ Exposed Fossils	Age and origins of exposed fossils	Unknown	○ Guided Tours, Geo-trails
New Surf Beach	○ Surf Beach zone	Unknown	Unknown	○ Geo-points, Guided Tours

These geo-sites described in Table 4 above are findings drawn from the interview data. These potential sites have been further analysed in Table 5 with sites drawn from relevant document analysis below. The purpose of this analysis is to create an inventory that will give a direction to what is existing, what can be improved for the future potential of an aspiring geopark. With reference to the body of literature in Chapter 2, this analysis utilises two levels of scale to assess these potential sites.

The first scale is Local Scale (LS). This scale is contained in terms of the geopark boundary particularly focused on the Kaikoura district only. The second scale is referred to as Regional Scale (RS) and encompasses the wider region, zooming out from Kaikoura to include geo-sites from Hurunui district namely, Hamner Springs and Cheviot. The RS goal is to offer a map of opportunities to potential geo-sites nearby that can be included into the concept. However, the geopark focal point and hub might be most appropriately operated from Kaikoura Town.

Table 5 Assessment of Kaikoura's Potential sites, as a setting for a future Aspiring Geotourism Development

Scale	Site	Existing features	Potential Improvements	Legal status	Planning framework
LS	**Geo-site:** o Kekerengu faults o Clarence River fault lines	o Exposed slips, o exposed archaeological remains, o Fault Sculpts, o Back country bluffs, o raised rocks along Clarence river	o Install signage. o Preserve parts of ruptured faults and exposed archaeological sites. o Promote 4WD Bike tours, o Rafting down Clarence river.	Privately owned lands, and partially DOC lands.	RMA 1991 – Consents for privately owned lands. Conservation 1987 – DOC owned lands.
LS	**Geo-site:** o Sea bed Uplift (Oaro to Mangamaunu)	o Coastal Walks, o New Surf Beach, o New Marina	o Informative and directional signage need to be installed to inform people going to the surf beach and o those wanting to enjoy a coastal walk along the raised sea beds.	DOC KDC	Conservation Act 1987 LGA 2002
LS	**Geo / Eco/Arc site:** o Kaikoura Peninsula	o Raised seabed around the peninsula - ability to walk from Point Kean to South Bay o Seal Colony, o Whaling station, o Whaler's Bay, o Walking tracks, o car park space, o Signage.	o No major improvements needed on site. Amenities & facilities are installed, walkways properly done and signage are informative and clear.	DOC owned	Conservation Act 1987
LS	**Geo-site:** o Kaikoura Ranges o River Catchments	o Seaward & Inland Ranges, Valleys, New lake formed, Hapuku River, o River catchments, o raised rocks o Site tours exist via helicopters.	o Install information signage of what other ecological/cultural significance are there to blend with the geology of the tour sites o Improve tracks on sites and signage might need to be improved it as well.	DOC	Conservation Act 1987
LS	**Geo/Eco site:** o Hopes Spring	o Bubbling spring, just outward from the Whaler's bay.	o Hopes Spring to become a reserve. Kayak businesses to promote visitors to the site. o Provide a direction or informative sign at the Peninsula of its locality.	KDC DOC	LGA 2002 Conservation Act 1987
LS	**Geo/Eco site:** o Kaikoura Canyon	o Dolphin tours o Whale watch tours.	o More information of the canyon made available at the geopark hub, to promote its scientific importance and significance.	DOC	Conservation Act 1987
RS	**Geo-site:** o Cathedral Cliffs, Gore Bay. (Cheviot	o Naturally exposed siltstone, engraved out of	o Promote its existence & attraction in the tourism industry. Improve tracks	HDC	LGA 2002

	Town)	its earth surface.	& information signs of its scientific importance & significance.		
RL	**Geo-site:** ○ Conway River Lake.	○ Formation of new lake resulted from the Kaikoura earthquake.	○ Promote its existence to display the strength of the earthquake on land resulting from land slips caused from fault lines.	HDC	LGA 2002
RS	**Geo-site:** ○ **Thermal Pools, Hamner Springs**	○ **Existing tourist destination Existing tracks,** ○ **signs and series of well-maintained hot pools. Accommodation & Parking.**	○ **No improvements thought.**	**HDC**	**LGA 2002**

All the key informants had named similar sites that they thought possessed potential of becoming a geosite that can promote the geological heritage through geotourism attractions. These potential geosite outlined in Table 4 were then analysed to portray how the geopark could possibly be established in the future under two scales, namely local scale that is contained within Kaikoura district boundaries or take on a regional scale and transboundary with Hurunui district to include the thermal pools of Hamner Springs and the Cathedral Cliffs from Cheviot. This analysis outlined in Table 5 also provides a basis of the stakeholders that will need to get involved and the legislations that will need to be complied with along with any related conservation protection management plans and policies and planning strategies in place.

5.4 Document analysis

Relevant documents were reviewed in relation to the possibilities of a future geopark for Kaikoura. In particular these documents include:

- UNESCO Criteria against the IUCN Guidelines
- Reimagine Kaikoura District Recovery Plan
- Conservation General Policy

5.4.1 UNESCO criteria against the IUCN guidelines

These international guidelines were assessed against each other to draw out the similarities each concept has towards the geotourism development that can contribute directly or indirectly to the geopark concept proposed for Kaikoura. In this analysis, the study had selected out sustainable tourism IUCN guidelines (see below) as most appropriate for this study to analyse against the UNESCO criteria.

The selected IUCN guidelines:

- Guideline 1: The 8 guidelines for capturing economic benefits from a sustainable tourism protected area (IUCN series 8 Sustainable Tourism in Protected Areas, 2002, p 26)
- Guideline 2: Guidelines for successful protected area planning processes. (IUCN series 8 Sustainable Tourism in Protected Areas, 2002, p 46 – 47)
- Guideline 3: Guidelines for environmentally and culturally sensitive facilities (IUCN series 8 Sustainable Tourism in Protected Areas, 2002, p 66 – 67)

Looking at the analysis summarised in Table 6 (see below) this study has found that the geopark concept does have similarities with the PA concept. While Table 6 also outlines their differences, this study is focused on the main similarities. These similarities include; i) the need and requirement to have a well-defined boundary in terms of both the concepts size and setting; ii) both concepts are required to have a management structure to oversee the operations of the attraction sites regularly and involve local communities in their programs; iii) both geoparks and PAs have emphasis on an economic development component to generate revenue that will remain within their rural township contributing to their local economy; iv) Education is another similar component shared between the two concepts. The goal is primarily the same, to educate the public that visit these attractions on the importance of these heritages, their scientific importance and the significance they possess that requires their existence to be conserved.

Table 6 Similarities and Difference between UNESCO Criteria for Geopark and IUCN guidelines for protected areas.

Criteria	Similarities		Difference	
	UNESCO	**IUCN**	**UNESCO**	**IUCN**
1 Size & Setting	Both parks require a clearly defined land area which can refer to land only, water only or combination of both for the park.		Geopark emphasis are on geo-diversity	Protected areas focus are on bio-diversity
2 Management & Local Involvement .	UNESCO Criteria 2 is similar to IUCN Guideline 2 under Socially acceptable, Responsibility & shared ownership, representative of wide interests, & relationship building oriented through the following;		The management structure is required to be an established & existing before applying the geopark application.	The management structure is not an existing system, instead it prepared during the application's plans processing procedures.
	Both parks management structure & system are thoroughly planned to operate effectively. The requirement to acquire qualified staffs and financial support bodies to manage & maintain the park is critical for the sustainability of the park.			
	Both parks do not concentrate on geological heritage only. The incorporation of other heritages (ecological, biodiversity and culture) is mandatory to include as a park component and management component to facility services for beneficial outcomes.		Geoparks are required to have some level of legislation measure however; it isn't strict on this protection to place specific regulations etc. Instead, it will just work with existing legislations in place for reserves within the park boundaries. However, again, it is relaxed on restrictions.	Protected areas are mandatory to have legislations that regulate restrictions with the protected areas.
	Both parks require a legislation protection.			
	Local involvement is a must be in both parks. From the planning stages to continued maintenance. The bottom-up approach is exercised in both planning processes. Strong collaboration reaching out to local authorities and local communities is essential in all stages of planning, implementation, monitoring and evaluation.			
3 Economic Development	UNESCO Criteria 3 is similar to Guideline 1. Overall developments aim to work within the framework of "sustainability" so the same resources can be available for future generation to experience.			
	Both parks stimulate the development of local goods & services – local community owned businesses (accommodations, diners & takeaways, selling local made products that complement the geopark concept, operate local flora & fauna sites, tour guides, trails for ground experience) etc. These efforts drive to create employment, support and invest into the local communities, encourages networking relationships between local authorities/local community/private investments that overall contribute to growth of the local economy.			
4 Education	UNESCO Criteria 4 is similar to Guideline 1			

Criteria	Similarities		Difference	
	UNESCO	IUCN	UNESCO	IUCN
	under provision of tour guides and related services and also Guideline 2 under Mutual learning oriented. Both parks found education as a necessary component to utilize for value enhancement of the park. To provide and organize support, tools and activities that will communicate the significance of the geo-diversity, bio-diversity and culture of the area to the public. Education development shared similarities through o establishing informative museum, o opening information centres, o install walk trails or cycling trails, o provide tour guides, o encourage further scientific research, introduce the concept of protected areas into the public school system as an awareness and knowledge of local students carry out field excursions for students, and o facilitate seminars etc.			
5 Protection & Conservation	The use of materials for installation/construction of facilities also practice this approach through recycling materials, use of renewable energy practices etc.		Protection for Geoparks as whole is not necessarily required to be under a regulation/restriction as compared to protected regulated protected areas like a national park. However, emphasis is placed on geo-sites with the park. If these sites need a protection measure, then it is the responsibility of the host country's government to create and install a regulation of measure of protection. It is not UNESCO's responsibility. For conservation – While the park looks at conserving all resources within the park geo-diversity, bio-diversity and the cultural heritages. Again, emphasis is placed on geo-diversity particularly Geological features like; o representative rocks and in situ exposures o minerals and mineral resources o fossils o landforms and	Unlike Geoparks, Protected areas are completely (entire area) protected and regulated with a legislation measure which makes protected areas imposing way more restrictions within the park in comparison to geoparks. For conservation – protected areas emphasis is on biological features, the fauna and flora of the protected areas. Guideline3 Focuses on activities that handle the environmentally sensitive facilities within these protected areas. The biological features are not outlined; however, the human activities (Resource conservation& consumption, materials & Green practices) all conclude the extra measures taken to

Criteria	Similarities		Difference	
	UNESCO	IUCN	UNESCO	IUCN
			landscapes	protect the bio-diversity at their natural settings.
6 The Global Network			Unlike IUCN guidelines provided, UNESCO has outlined networking criteria of what is expected from the geopark. These features; o Preserve geological heritage o Educate the broad public o Ensure sustainable socio-economic & cultural development o Foster multi-cultural bridges o Stimulate research o Contribute actively to the life of the network o Contribute articles to the GGN publications.	IUCN guidelines do not specify the global networking in the guidelines. However, regarding UNESCO's networking criteria and the guidelines under IUCN. It can be concluded, that protected areas draw similarities under the following network features; o Stimulate research o Contribute actively to the life of the network o Contribute to IUCN publications. Difference would be in the o Preservation IUCN focuses on plants & animals (bio-diversity) instead of geo-diversity: rocks, landforms and landscapes.

5.4.2 Reimagine Kaikoura District recovery plan

The recovery plan was adopted because of the people and the local communities and to strategically provide a direction towards the district's resilience and full recovery.

"The Kaikōura District Recovery Plan is a strategic document to provide a clear direction and pathway towards restoring and enhancing all aspects of community wellbeing with social, cultural, economic, physical and natural components. The plan will achieve this by outlining a vision and complementary goals, identifying key components of the recovery process, establishing key action areas and timeframes and providing a tool for monitoring and reviewing"(Recovery Plan, 2017, p40)

The five key components of recovery showed a lot of relevance, challenges and opportunities. Looking back at the body of literature in Chapter 3 these components share similarities with the components that complement the Geopark.

Table 7 Key Five Components to Reimagine Kaikoura's Recovery (source: Reimagine Kaikoura Recovery District Plan, 2017, p40)

Five Recovery Components	Component Description
1. **Community Recovery**	• *Education, physical and psychosocial health of the community.* • *Recreational and cultural facilities for all generations and the restoration of heritage sites and buildings.*
2. **Economic Recovery**	• *Investment, business, labour and insurance liaison.*
3. **Built Environment Recovery**	• *Housing, infrastructure, transport and buildings.*
4. **Natural Environment Recovery**	• *Biodiversity, the coast and natural hazards.*
5. **Looking to the Future**	• *Communication, funding, finance, research, governance, coordination and project management of the recovery activities*

Overall, the recovery plan, aims to benefit the district as a whole in the long term. This study had selected a number of opportunities (see section 6.5) from these key components that were thought fitting and would be accommodating to the Geopark concept in the future should the concept be considered through the KDC.

5.4.3 Conservation General Policy

This policy is the highest level of statutory policy that is governed under the Conservation Act for conservation management under which the following areas were selected based on their relevance to the concept:

Policy 3.Public Participation in Conservation Management *– Reinforces network building, consultation and public participation. Also acknowledges the provision of educational information to promote active support for conservation.*

Policy 4.5 Geological features, landforms and landscapes *– Promotes the identification of geological heritages of international or national; local or tangata whenua significance*

Policy 9 People's Benefit and Enjoyment *– Promoting attractions on conservation areas while at the same time avoiding adverse impacts on the natural resources and heritages.*

These choices were singled out from the entire policies that shaped the Conservation General Policy. From these selected, there are overall similarities found in the body of literature in this study (see chapter 3) that reflect the concept of a geopark and geotourism.

5.5 The planning framework

Analysing findings drawn from the interview data and document analysis has contributed to the formulation of the planning framework appropriate for the initiation of the geopark concept in Kaikoura (see Figure 7). It was best thought to provide an outline framework of the relevant legislations best thought appropriate, and relevant to see a geopark proposal through the planning process application.

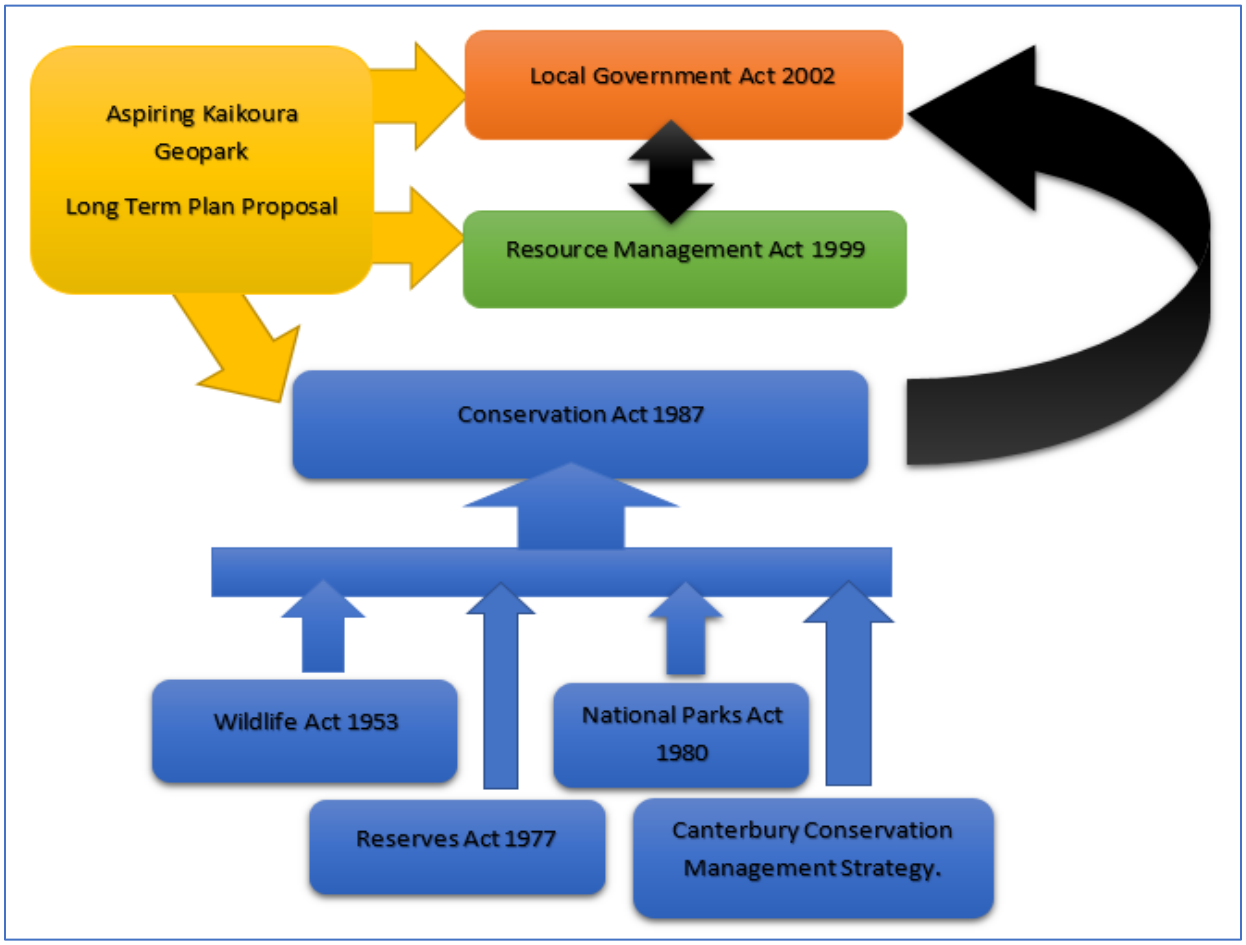


Figure 7Outline of the planning framework (source: Author)

Figure 7 above provides an overview illustration of the relevant legislation that contributes to the planning process that will be outlined in the next section. The goal of the outline framework of Figure 7 is to show the relationship of relevant legislations to the planning process.

This study has found the planning process a proposed geopark in New Zealand will need to apply for to be established is outlined in the Local Government Act 2002 therefore; this places the LGA 2002 on the top of the framework. All the arrows in Figure 7 are directed towards the LGA 2002 because the other legislations regulations and requirements will be considered in the planning process of the proposed geopark plan therefore, their inclusion was thought appropriate to outline before going into detail with the planning process in the next section that only focuses on the LGA application procedure.

5.6 The planning process

Figure 8 represents the planning process, this study has found appropriate to process the aspiring geopark plan. According to KDC representative DOC holds majority of land ownership in the district. Existing DOC managed tourist attractions referred to in Table 5 will need to be consulted with DOC.

It will be necessary whilst considering the geopark proposed plan; to comply with DOC related legislations (Conservation Act 1987, Reserves Act 1977, National Park 1980 and the Canterbury conservation management strategy) to recognise what they have currently in place for the district hence, the need to include their contributions into the planning process.

The geopark proposal will need to be presented to KDC by the project team and should KDC wish to proceed with the concept, the most appropriate planning process application is through the Long-Term Plan process under section 93 of the LGA 2002 (see Figure 8).

In summary, there are a lot of requirements to consider and comply with in the planning process alone. This planning process concentrates only with the requirements set out in the Local Government Act 2002, with the entire application rested on 5 phases of progression as demarcated through the arrows (see Figure 8).

The initial phase is all about identifying the main or key objects that will be involved in the geopark plan. The next phase is about describing every detail of what needs to be included in this geopark plan (the project description).

Satisfied with the project description, the next phase is all about reaching out to the wide communities through consultations getting the concept out to the public, getting the public to participate and especially, getting the indigenous communities informed and involved.

The next phase is having to the send the proposed plan and all that's processed an achieved thus far to the Auditor General's office for review, meeting the requirements and satisfying the Auditor General's office will then proceed to the final phase of decision making process. It is at this final phase, that the Council will decide whether to adopt or delay the establishment of the geopark concept.

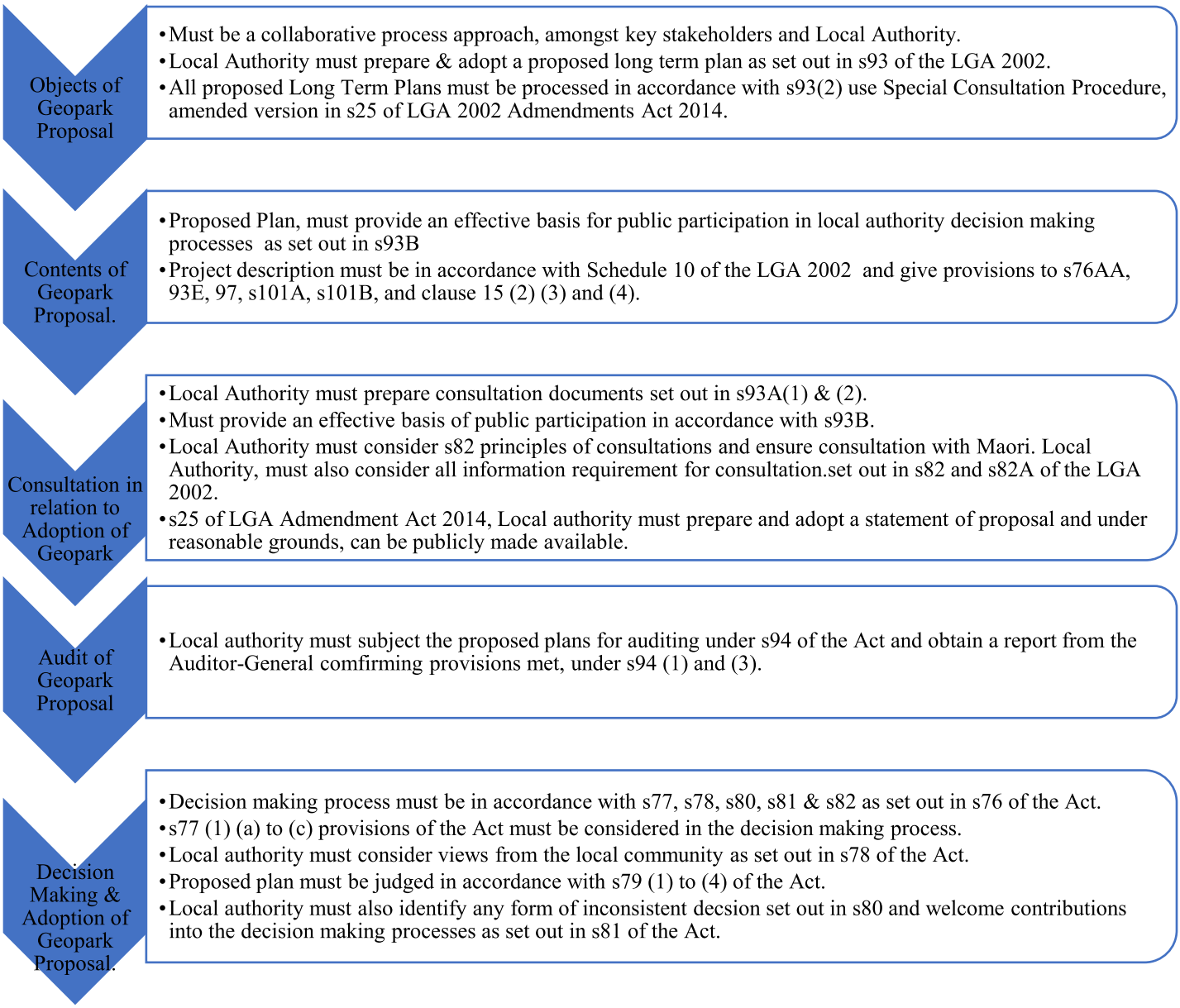


Figure 8The Planning Process: A proposed Geopark Plan (source: Author)

5.7 Summary

This results chapter, described findings collected from the week's field trip to findings collected from the document analysis. These findings was further analysed to provide for the planning process framework at the end of the chapter. Further discussions of these research findings, is elaborated in the next final chapter of this dissertation.

Chapter 6.0 Concluding discussion

6.1 Introduction

In this chapter, the findings outlined in Chapter 5 will be discussed to address the key research questions outlined in Chapter 1 and reintegrated in Chapter 4 before concluding the dissertation with future research recommendation.

6.2 Understanding the geopark concept

Analysis from UNESCO's geopark criteria and IUCN's three sustainable tourism guidelines in Table 6 is a clear indication in the New Zealand context, that the geopark concept is still very new and different from New Zealand's existing PAs system despite the similarities shared.

In conclusion with geoparks, most existing New Zealand PAs are more restricted, controlled and regulated by the central government. While there is no legislation specifically designated for the establishment of geoparks, this study has discovered that geoparks can be established in New Zealand and this establishment is achieved through meeting the planning requirements of the local government's long term plan process.

New Zealand PAs are slightly different in that both its management structure and operational components need to be recognised by the various Acts of parliament (Conservation Act, Reserves Act, National Parks Act etc) and are governed, managed and maintained by these laws.

While it was satisfactory to acknowledge that both geoparks and PAs complement one another's heritage and natural resources, it is worth highlighting that geoparks still place emphasis on geological significance and requires a community and economic development to support the life of the geopark whereas New Zealand PAs focus remain on biological significance and are not required to meet these geopark criteria.

It is here that the study came to understand that PAs can also be a part of the geopark concept. For instance, the Kaikoura Canyon, Mt. Fyffe and Kaikoura Ranges are conservation reserves protected under legislation administered by DOC. However, these same sites also hold potential to become geo-sites within a broader geopark concept. Hence, their legislations can be incorporated into the geopark concept. It is therefore important to acknowledge the involvement of DOC and the need for DOC to work in partnership with the geotourism sector is crucial.

Geoparks are not governed by specific legislation and have operational frameworks that are quite flexible. Key geo-sites like those mentioned above must always be protected by law either at the local level, regional or national level. One good example is Kaikoura's Te Korowai o Te Tai o Marokuro known as Kaikoura's coastal marine guardians.

Te Korowai is an organisation made up of local and regional representatives who contribute to the strategic conservation planning of this marine management area (see Appendix 5 for site map). Governed under DOC Te Korowai's existing marine strategy in cooperates a number of marine protected areas that reflect a clear indication of protected areas possessing geological heritage that can become part of the geopark concept. These following PAs were recognised through the Kaikoura Marine Management Act 2014:

1) Hikurangi Marine Reserve – includes the Kaikoura canyon up to the south coast of Kaikoura town. Encompassed in the marine management area (see site map in Appendix 5) that is currently proposing for a UNESCO world heritage site according to the recent Reimagine Kaikoura District recovery plan.

2) TeRohe o Te Whanau Puha – includes the whale sanctuary that exists due to the geological presence of the Kaikoura canyon that has provided the underwater passage access to these whales to come closer to shore. The whale sanctuary is implemented and planned specifically to protect these marine mammals

3) Ohau Point fur seals sanctuary – The existing planning strategy have been put in place to protect these fur seals from human disturbance, hence plans implemented have allowed public viewing at Ohau point from a safe distance.

4) Taiapure local fisheries (2 sites) – allows provisions for traditional food gatherings around the peninsula area.

5) Mataitai Reserves (3 sites) – strategic conservation planning implemented has prohibited commercial fishing from these sites to allow provisions for Taiapure local fisheries to carry out their traditional food gatherings without large scale disturbance from commercial fisheries.

This example is a clear reflection of protected areas with significant geological heritage. For instance, the Kaikoura canyon and its unique geological characteristics complements the surrounding rich marine life; the likes of sperm whales, dolphins and seals. It is therefore appropriate for this study to understand the geopark concept from a PAs perspective.

6.2.1 Geotourism attractions

Discussions held with key informants collectively highlighted their support to welcome change into their tourism sector. Kaikoura as they all know has relied on their tourism industry to attract tourists and promote local businesses.

When the concept of geotourism was discussed in the interviews, the ideas of geo-trails, (walking/cycling/bike) and local guided tours had positive responses. Key informants pointed out related activities already exist in DOC managed attraction sites provision of informative signs, tracks, and walkways, and the similar installation found with private owned bike tours and river rafting activities.

Geotourism attractions charge an expensive fee to visit the geo-sites and emphasize the scientific importance of these geo-sites.

With the informative signs and local guided tours, these attractions can become a learning environment as well that provide an educational experience for tourists. Ultimately, these attractions contribute to sustainable development, the findings have illustrated that geotourism is the conceptual framework to hook geological heritages and how their presence has influenced the biological heritage in its natural environment.

Discussed briefly by the tourism representative, who in her interview, highlighted about the new surf beach at the Kaikoura esplanade additional research into this finding, confirmed that the uplift of sea beds along the coastline have resulted to new surf breaks at Gooch beach, Mangamaunu (Dangerfield, 2017). According to (Dangerfield, 2017) this new surf beach has paved the likes of enjoying the surf breaks that can now become an all year round activity that was previously not available.

Can this contribute to geotourism? Certainly, looking back to the body of literature in Chapter 3, these encourages setting up local businesses such as a beginner's surfing course, surf tournaments that could become an annual event, might attract restaurants and accessories outlet shops to establish near the Gooch beach in the near future, etc.

In summary, having to understand the geopark concept after analysing the findings has clearly indicated the potential within the Kaikoura district for a geopark. Again, this reflects goals outlined in the Reimagine Kaikoura recovery district plan in their efforts of working collaboratively to improve local businesses and the economy, the built and natural environment to promote their tourism industry and attractions that one's thrived pre-earthquake.

6.3 The aesthetics of Kaikoura's natural environment

After collating findings from the observations, interviewees' responses and document analysis, the study found Kaikoura's geological heritage possesses a natural focal point within the district. According to the Canterbury geologist who mentioned in his discussion; *"when informing people about the geo-hazards and what's the implications of that and at the back of your head you'd think right how would you educate tourists about the impacts of seismic events knowing they'll probably go to Kaikoura and then they'll go to the West Coast that's far greater the size of seismic events. What then can a tourist expect? So you can kind of introduce the geopark concept there".*

It is here, that the study found despite the small size and setting of the district compared to other districts in New Zealand, it is Kaikoura's geological heritage that is a symbolic character of the district.

It is the natural physical environment that overall complements other existing environments and heritages. Reintegrating the body of literature from Chapter 3, the study can confirm that there is a uniqueness and significance to the relatively short distance of the district's mountain ranges, river catchments down to the sea. Meeting the sea, the landscape takes drops in depth to the submarine Kaikoura canyon.

These geological heritages are results of the seismic events that have brought out attractions such as Mt. Fyffe, snowy cap Kaikoura ranges, the Peninsula, and the canyon. These natural attractions, not only complemented the ecological environment around them but have complemented the built environment as well as the local economy through the tourism industry and due to its scientific importance opened educational opportunities to local schools, universities and scientists for research and learning purposes.

6.3.1 Centrality of location

Findings also discovered the location of Kaikoura as a hotspot tourist destination. Located in the hub between Christchurch, that offers tourists a gateway to South Island and Picton, which can also be seen as a gateway to the North Island Kaikoura in this regard, can be said to be centrally located and access friendly.

Prior to the earthquake, existing attractions that attracted visitors into Kaikoura were the likes of whale watch, dolphin tours, kayak with the seals, seal colony, farm bike tours, rafting activities and walking and cycling trails and tracks. These attractions had boosted the local economy and promoted the district's tourism industry.

Post-earthquake, discovered additional new attractions the new surf break at Gooch beach, the fast-speed rafting at Clarence river, new formed lakes up the Kaikoura ranges, sea bed uplifts along the Oaro to Mangamanu coastline, Kekerengu ruptured seismic fault lines etc, These are positively seen to promote tourism attractions into the district. These attractions can be visited within two days of visit due to the strategic location of Kaikoura between Christchurch and Picton.

6.3.2 Community empowerment

Given the aesthetics of the natural environment and the centrality of the district's location, these new geological features have formed spectacular attractions that have the potential to boost the local economy post quakes. As mentioned in section 2.4 the local economy stood at $120 million at the year ending September 2016. The increase of tourist ratings through these periods gave the local residences a sense of pride and belonging.

At the time of this study's field trip it was evident that the nature of most local businesses was tourist oriented or focused on tourism. The observations saw a number of bed and breakfasts in the outskirts of the township, more backpackers and lodges and motels options within the township boundary, several local owned restaurants and cafes that reflected the local residences involvement in the tourism industry and their source of earning a living.

This reflected these local communities are resilient and a natural disaster was not going to relocate them away from Kaikoura. There were a number of businesses witnessed closed since the earthquake, still getting repairs and construction works carried out and there were those businesses who managed to re-open just months post-earthquake.

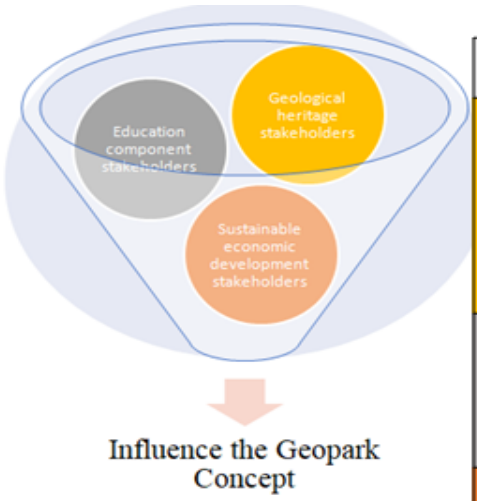
To have an existing resilient community, that are involved in networking with KDC this district has clearly indicated their local pride and support is strong and they are empowered through the process. Reflections on the geopark concept literature in chapter 3 indicate that Kaikoura has experienced certain aspects of a geopark concept and should easily meet the geopark criteria should the district choose to adopt the concept in the future. With reference to UNESCO's criteria the core components are education, sustainable development (through geotourism) and geological heritage where these components must work in a holistic approach to benefit the local community and people.

According to local school principal who stated in his discussion "it *is important to educate our students the importance of their physical environment and the natural forces that help to shape our district"*. Furthermore, having the local school engage in research programs empowers and enables local students to have a deep understandings and an interest in the natural environment.

Similarly, museum manager who stressed there is more functions to a museum than just a place of storage and display highlights the role the museum plays to empower the local communities within the district through hosting educational and research oriented events. KDC representative discussed how Kaikoura's current earth check initiative program has kept the local communities connected and involved. Overall this study has found that there is an existing bottom-up approach and networking in place between KDC and the local communities and business groups. This is an indication that KDC will continue to work with its people for its people and promote community connectivity to empower its communities, and educate them of future opportunities in place.

6.4 The planning tools behind the concept

With reference to the interview data and document analysis in chapter 5, Figure 9 (see below) was compiled to illustrate the necessity to include key stakeholders whose role and contribution in the district will greatly impact the geopark concept should KDC consider this proposal in the future. Any disagreements by these stakeholders can result in delay of the planning process.



Component classification	Key stakeholders
Geological heritages stakeholders	o Te Runanga o Kaikoura iwi o Te Runanga o Ngai Tahu iwi o Environment Canterbury o Department of Conservation o Kaikoura District Council o Private land owners with exposed seismic fault sculpt.
Educational component stakeholders	o Local schools within the district o District museum o GNS research scientists o Universities (Lincoln, UC and Otago)
Sustainable economic development stakeholders	o Kaikoura's chamber of commerce o Local communities

Figure 9 Stakeholder Model (source: Author)

It is a challenge to get all these key stakeholders to support a district proposal such as a geopark proposal and time consuming, in allocating community meetings and workshops to promote the ideas the concept has to offer.

Alongside building a network and maintaining the stakeholder relationship is the relevant legislations reviewed in chapter 3 and outlined in Figure 7. Their relevance and relationship contributes towards the planning process, the following paragraph will discuss each of this legislation and their relationship to the planning process.

The RMA 1991 is relevant as earlier mentioned in chapter 3 and 5 for its resource consent applications that will link to economic developments complementing the geopark theme. Additionally, the RMA is also relevant for any conservation protection KDC would like to impose for the geopark will need to be included in the district plan processes that falls under the RMA 1991.

The next relevant legislation is Conservation Act 1987, in summary, the protections of existing attraction sites will need be protected continuously under the appropriate laws and all conservation management

strategies and protection management areas, policies and plans will need to be complied by the planning processes hence the need for the geopark concept to consider the Conservation Act. Additionally the following relevant legislations that share similar relationships to the Conservation Act that need to be considered as well includes; National Parks Act 1980, Reserves Act 1977 and Wildlife Act 1953.

To see these potentials through to adaptation and establishment of a geopark requires the planning process framework outlined Figure 8 for process by the KDC. It is important to have the project fully supported by members of the local communities, the local chamber of commerce and to a activate project team that is passionate in conducting community workshops and meetings to convey the geopark concept in the pursuit to gain the local communities support.

This study has found these approaches are the necessary essential steps to obtain; the support of Runanga o Kaikoura, Environment Canterbury, local businesses, and local communities prior to approaching the KDC. This will reduce delay in the project application and provide the necessary support from the local communities and local businesses.

A reflection on the planning process (see Figure 8) highlights the various stages the geopark long term plan will need to comply before reaching the final decision making stages. Therefore, it is important to get key stakeholders on board from the initial stages of the project.

6.5 Conclusion

Overall, the discussions have identified that the findings in this study have depicted the possibilities and appropriateness of the Geopark concept fitting for Kaikoura. Reimagine Kaikoura District Recovery Plan have clearly outlined similarities that reflect the Geopark concept, and potentials for a Geotourism venture.

The body of literature used in this study has highlighted the key concepts and impacts caused from the 2016 earthquake that found a means to promote a geologically themed Geopark for the district. From this perspective, it is clear to state, that a concept such as a Geopark can turn negative impacts into positive outcomes for the betterment of the community. This study, has therefore reflected back on the research to find out what exactly the findings is trying to convey apart from the determination of Kaikoura showing positive evidence of potentials for a Geopark.

What emerged was the hierarchy of achievement status the concept represented for the case of Kaikoura. Clearly, throughout this research, it was understood to become a UNESCO branded global Geopark there must be an existing Geopark on the ground, existing and operational management structure and a sustainable financial stream that does not only sustain the life of the Geopark and its team. It also

financially accommodates and hosts UNESCO assessing officials in the first two years of becoming a global member, and every five years thereafter and sponsor their very own management representatives between two to three staffs to attend the annual UNESCO conferences. This study has found it is ideal for Kaikoura to pursue with an Aspiring Geopark of national status in its initial attempt of accomplishment. The UNESCO Geopark status can be pushed further up the hierarchy as an end goal for the district to target in the long run as reflected in the Figure 10 below.

Figure 10 Proposed Realistic Achievement Hierarchies for Kaikoura's International Recognition in the Tourism Attractions Arena

On the final note, it is likely that a passionate and dedicated professional champion is needed for this project should Kaikoura be interested in pursuing with a Geopark concept. The champion must take into consideration, key findings of this study and pursue on conducting a thorough baseline information collection. It is a crucial key, to obtain the right and accurate information. The geopark boundaries must be well defined into each geo-site. Furthermore, recommend a need for the project team to work in collaboration with every local community from every geo-site. These communities must be informed as well as the Te Runanga o Kaikoura of the proposed concept. On this note, it is also recommended for a need to build a constituency amongst New Zealand's geoscience community to see more geoparks

in the country in the future and lastly the need for scientists and researchers to work with planners in seeing such concept proposals into reality.

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8.0 Appendices

Appendix 1: Sample (to the local school) copy of Invitation letters.

Date……..

……..

……..

……

Dear ……

Interview Request – Dissertation Research on the topic; exploring the UNESCO Geopark concept as a pathway to a Geotourism attraction: A Kaikoura case study, Canterbury, New Zealand

My name is JosiviniKaloumaira, a second-year postgraduate student in Lincoln University currently undertaking research on the potential for creating a Geopark in Kaikoura.Iam writing to invite a member of your school staff (perhapsa Geography teacher) to participate in my research study.

This participation aims to identify the perception of Kaikoura local school towards the concept of a Geopark should it be adopted through the local authority, and to examine the relationship between the geopark concept and possibleeducational outcomes associated with its establishment.

I would like to request your school's participation in a semi-structured face-to-face interview that should take about 30 minutes of the participant's time. If suitable, it would be convenient if the interview could take place at the school.I plan to be in the Kaikoura next week (July 25th, 26th, & 27th), and wondered if it might be possible to facilitate this meeting during this time?I am grateful to you for considering my request. If face to face interview is impossible for any reason. correspondence via email is an alternative.

The research findings will be compiled into a dissertation paper as part of the requirements for the Master's Degree of Planning. Furthermore, information of this research will be invested into further studies towards the Kaikoura post-earthquake recovery.

Enclosed is a copy of the research information sheet and interview questions to give the relevant Social Science teacher an understanding of the information, this study is requesting to acquire.

If you have any queries or concerns about your school's participation in this study, please contact myself or my research supervisor. We would be happy to answer any questions or discuss any concerns you may have about participating in this research.

Yours faithfully,

……

JosiviniKaloumaira (Ms.)
Postgraduate Researcher
Faculty of Environment, Society and Design
Email: josivini.kaloumaira@lincolnuni.ac.nz

My Researcher Supervisor: Dr. Stephen Espiner, Ph.D.
Faculty: Environment, Society & Design
Email: Stephen.espiner@lincoln.ac.nz

Appendix 2: Sample copy of research information sheet

Lincoln University
Environment, Society and Design Faculty
Research Information Sheet

A. The geopark concept

The concept of a Geopark is about protecting natural heritages and promotes geological values of an area plus its local economic development strategy from the Geopark to promote development that would sustain the local economy in the long run. The concept is linkedto sustainable development. Therefore, an area of Geopark must not only have outstanding geological heritage but must also in support have a plan for the sustainable economic development of the local population. These can come in the form of tourism "e.g.", the operation of tour guides, installation of cycling and walking trails and so forth.
(Jones, 2008; Turner, 2006; UNESCO, 2017).

B. Geopark definition:

A geopark refers to territories that include geological heritages and a sustainable territorial development strategy. It holds sites and landscapes of international geological significance managed with a holistic concept of protection, education, and sustainable development.
Geoparks are naturally utilized geological heritages linked to other aspects ecological, archaeological, and cultural heritages of an area of significance. Geopark sites are intended to develop and improve knowledge to understand and appreciate the earth in all its forms that shape a local community, and distinguished with geological scientific importance, historical and cultural richness that makes it globally significant
Overall Geoparks aim to create pride and a sense of identification to local communities. The interconnectedness Geoparks offer varies in the following areas;

- conservation of geo-sites,
- identifying the geology scientific values for educational benefits and research,
- promoting the surrounding ecological, archaeological, and cultural heritages whether in its natural form or built.

(Turner, 2006, p353; Carvalho, 2014; Dowling, 2011; Farsani et al., 2013; Ngwira, 2015; UNESCO, n.d).

C. Survey Information:

I would like to invite voluntary professionals in their respective fields to participate in this project with the objective of exploring the potential of Kaikoura District establishing a Geopark. The survey hopes to acquire professional comments and information that will achieve the aim of this study.

This study aims to identify geological, ecological and archaeological (natural & built) sites that possess a level of significance that can become a part of the Geopark Concept. Additionally, acquire information on the planning process framework that the local authorities will use for such public proposal.

I will request that you fill out a questionnaire that should take no longer than 30 minutes to complete. All information provided by you, will be treated as confidential and your participation will be kept anonymous. All data collected will be seen only by the research team and stored away in an electronic form secured with a password. All original copies of the questionnairesurvey will be filed away in a secured filing cabinet.

The research findings will be compiled into a dissertation paper as part of the requirements for the Master's Degree of Planning, at Lincoln University. If you have any queries or concerns about your participation in the project, please contact me or my research supervisor. We would be happy to answer any questions or discuss any concerns you may have about participating in the project.

Researcher: Josivini Kaloumaira, Masters of Planning Student,
Faculty: Environment, Society & Design.
Email: josivini.kaloumaira@lincolnuni.ac.nz

My Researcher Supervisor: Dr. Stephen Espiner, Ph.D.
Faculty: Environment, Society & Design
Email: Stephen.espiner@lincoln.ac.nz

Appendix 3: Sample copy of informed consent forms

Lincoln University

Environment, Society and Design Faculty

Informed Consent Form

Project Title: ***Exploring the UNESCO Geopark concept as a pathway to a Geotourism attraction: A Kaikoura case study, Canterbury, New Zealand***

I have read and understood the description of this project. With reference made to the Research Information sheet released to me, I agree to take part as a participant and I also give consent to publication of the findings from this study with the understanding that anonymity will be preserved. I understand also that I can withdraw from the project, including withdrawal of any information I have provided.

Name: _____

Signed: _____ Date: _____

Participant ID: _____

Appendix 4: Sample (to the local school) copy of interview questions

Lincoln University

Faculty of Environment, Society and Design

Semi-structured Interview Questionnaire

1 Question based on geopark components, a possible subject in school
In what ways is the district's geology important / included in the school's current curriculum?

2 Question on Significant Geopark sites
Which specific sites within the district are unique or special in Kaikoura, potential sites worth promoting as attractions in the region?

3 Question based on education excursion to a geopark
If a geopark was established in Kaikoura, do you think schools (including outside the district) will visit Kaikoura (school excursion) to learn about its geology, geomorphology, ecology and archeology as a social science course (either in Geography or Tourism)?

4 Question based on perception of local education institution
From an educational perspective – Would you agree or disagree with this Concept if KDC considers adopting it into the recovery plan.

Appendix 5: Marine Protection Management Area Site Plan: Te Korowai Map

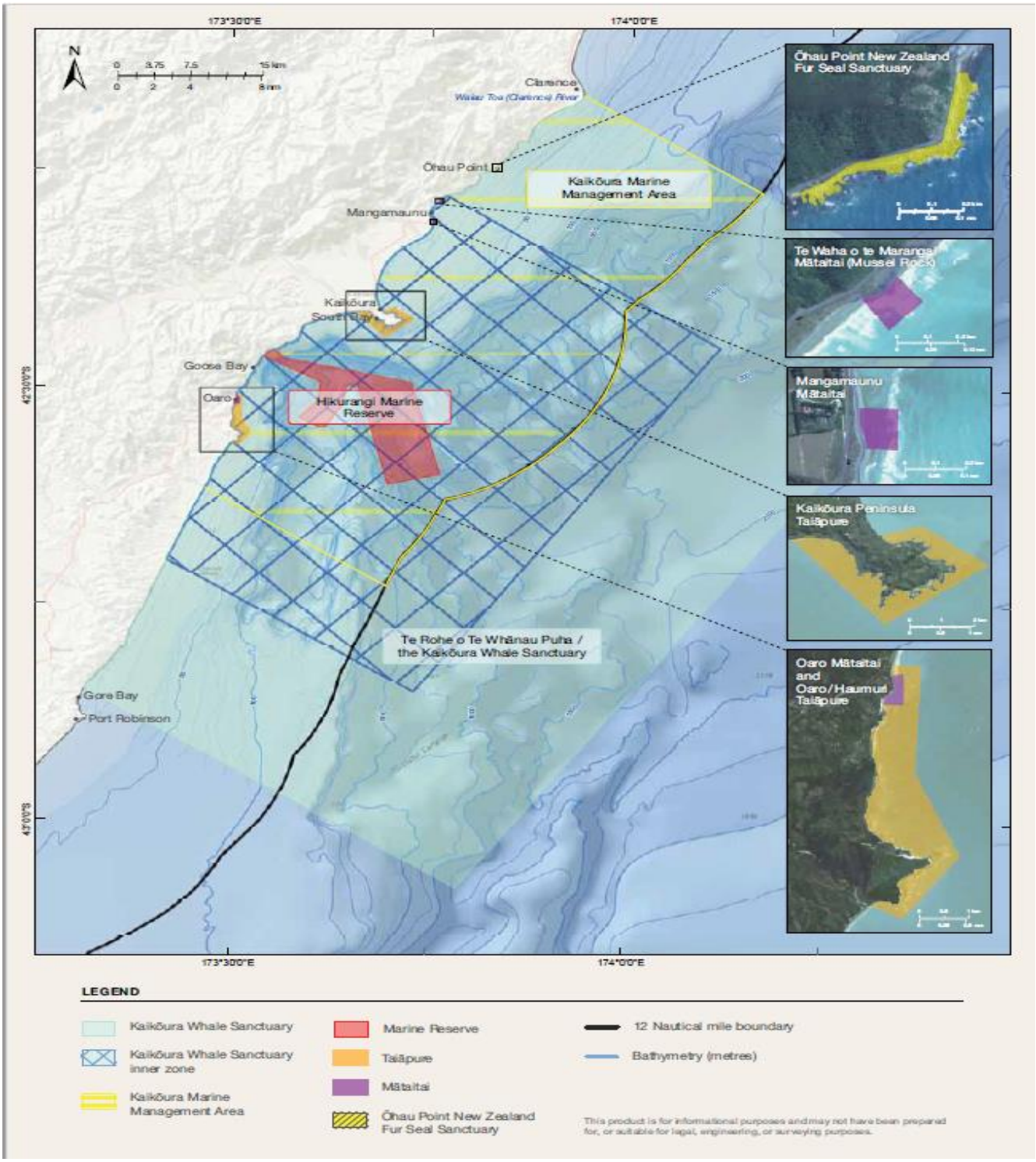

Figure 11Te Korowai Marine Management Area (source http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-protected-areas/te-korowai-map-08-2014.pdf)